GenCore version 5.1.4_p5_4578

OM protein - protein search, using sw model

Run on: May 16, 2003, 10:37:36 ; Search time 35 Seconds
(without alignments)
45.686 Million cell updates/sec

Title: US-09-551-151A-43
Perfect score: 64
Sequence: 1 SPQGIAGQRNFN 12

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 908470 seqs, 133250620 residues

Total number of hits satisfying chosen parameters: 908470

Minimum DB seq length: 0
Maximum DB seq length: 2000000000 = open

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 500 summaries

Database : A_Geneseq_101002:*
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	64	100.0	12	20	AAW94414	Cancer protease-se
2	64	100.0	21	22	AAG66970	Mutant preproricin
3	43	67.2	29	22	AAG66968	Mutant preproricin
4	43	67.2	29	22	AAG66974	Mutant preproricin
5	42	65.6	8	18	AAW17687	Substrate #1 for m
6	42	65.6	8	21	AAY97994	Synthetic substrat
7	42	65.6	8	22	AAU07721	Human leukaemia ce
8	42	65.6	8	22	AAB70111	Synthetic collagen
9	42	65.6	8	23	AAO14105	Dinitrophenol-tagg
10	42	65.6	9	14	AAR38477	Sequence of synthe
11	42	65.6	9	18	AAW27492	Cell binding pepti
12	42	65.6	9	18	AAW18826	Collagen binding p
13	42	65.6	9	20	AAY29992	Collagen cell bind
14	42	65.6	9	22	AAG67403	Synthetic peptide
15	42	65.6	15	12	AAR11114	Collagen peptide a
16	42	65.6	15	14	AAR38476	Sequence of peptid
17	42	65.6	15	18	AAW27491	Cell binding pepti
18	42	65.6	15	18	AAW18825	Collagen binding p
19	42	65.6	15	20	AAY29991	Collagen cell bind
20	42	65.6	15	20	AAY29587	Collagen fibronect
21	42	65.6	15	22	AAG67402	Synthetic peptide
22	42	65.6	15	23	ABB10111	Collagen cell bind
23	42	65.6	16	17	AAR92859	Collagen fragment
24	42	65.6	16	21	AAY76868	Collagen receptor
25	42	65.6	19	22	AAB35632	Collagenase cleava
26	42	65.6	25	20	AAY07306	Collagen assembly
27	42	65.6	333	22	AAE02713	Recombinant human
28	42	65.6	333	22	AAB68067	Amino acid sequenc
29	42	65.6	416	22	AAE02711	Human alphal (I) t
30	42	65.6	416	22	AAB68065	Amino acid sequenc
31	42	65.6	500	22	AAE02708	Human alphal (I) t
32	42	65.6	500	22	AAB68062	Amino acid sequenc
33	42	65.6	510	22	AAE02712	Recombinant human
34	42	65.6	510	22	AAB68066	Amino acid sequenc
35	42	65.6	662	22	AAE02718	Human alphal (I) t
36	42	65.6	662	22	AAB68072	Amino acid sequenc
37	42	65.6	822	20	AAY06240	Mouse recombinant
38	42	65.6	936	22	AAB70107	Gelatin protein.
39	42	65.6	1057	21	AAY84541	Amino acid sequenc
40	42	65.6	1057	21	AAY84544	A human collagen 1
41	42	65.6	1058	21	AAY84403	Amino acid sequenc
42	42	65.6	1107	17	AAR89472	Collagen/decorin(a
43	42	65.6	1107	21	AAY84540	Amino acid sequenc
44	42	65.6	1169	17	AAR89469	Collagen/BMP-2B fu
45	42	65.6	1169	21	AAY84537	Amino acid sequenc
46	42	65.6	1171	17	AAR89470	Collagen/TGF-beta-
47	42	65.6	1171	21	AAY84538	A chimeric collage
48	42	65.6	1341	16	AAR71701	Collagen alpha 1 (
49	42	65.6	1341	21	AAY96122	Collagen type I al
50	42	65.6	1341	23	ABB80733	Collagen type I-al
51	42	65.6	1341	23	ABB09625	Amino acid sequenc
52	42	65.6	1341	23	AAE16475	Human collagen alp
53	42	65.6	1388	17	AAR89471	Collagen/decorin f
54	42	65.6	1388	21	AAY84539	Amino acid sequenc
55	42	65.6	1411	21	AAY56800	Human preproalpha
56	42	65.6	1449	22	AAE02535	Porcine alphal(I)
57	42	65.6	1463	22	AAE02532	Bovine alphal(I) c
58	42	65.6	1464	19	AAW68485	Human recombinant
59	42	65.6	1464	22	AAU14136	Human novel protei
60	42	65.6	1464	22	AAB82454	Human pro-alpha-1
61	42	65.6	1464	23	ABB90764	Human Tumour Endot
62	42	65.6	1518	22	ABG22679	Novel human diagno
63	41	64.1	14	22	AAG66971	Mutant preproricin
64	41	64.1	18	22	AAG66972	Mutant preproricin
65	41	64.1	22	22	AAG66969	Mutant preproricin
66	41	64.1	23	22	AAG66985	Mutant preproricin
67	41	64.1	29	22	AAG66979	Mutant preproricin
68	40	62.5	8	18	AAW17688	Substrate #2 for m
69	40	62.5	9	17	AAW49135	Human leucocyte an
70	40	62.5	9	19	AAW75516	Collagen II specif
71	40	62.5	12	20	AAW94448	Mutant proproricin
72	40	62.5	15	19	AAW75541	Collagen II specif
73	40	62.5	19	22	AAB35631	Collagenase cleava
74	40	62.5	475	23	ABB90933	Herbicidally activ
75	40	62.5	1418	15	AAR59751	Type II collagen.
76	40	62.5	1418	16	AAR71703	Collagen alpha 1 (
77	40	62.5	1418	21	AAY96124	Collagen type II a
78	40	62.5	1418	22	AAB35624	Human type II coll
79	40	62.5	1418	23	ABB80735	Collagen type II-a
80	40	62.5	1418	23	ABB09627	Amino acid sequenc
81	40	62.5	1418	23	AAE16477	Human collagen alp
82	40	62.5	1442	16	AAR79480	Rat type II collag
83	40	62.5	1487	19	AAW61562	Human type II coll

84	40	62.5	1487	23	ABG61861	Prostate cancer-as
85	39	60.9	150	22	AAO00510	Human polypeptide
86	39	60.9	211	23	AAU76144	Ralstonia solanace
87	39	60.9	1324	23	AAU72929	Neisseria meningit
88	38	59.4	523	21	AAB03425	Wheat putative car
89	38	59.4	695	21	AAY45097	Arabidopsis thalia
90	38	59.4	1647	23	ABP28561	Streptococcus poly
91	37.5	58.6	84	21	AAG18992	Zea mays protein f
92	37.5	58.6	953	22	ABB58389	Drosophila melanog
93	37	57.8	7	22	AAU07357	Gelatinase A (MMP-
94	37	57.8	7	22	AAU07720	Gelatinase A (MMP-
95	37	57.8	7	22	AAU07535	Gelatinase A, MMP-
96	37	57.8	8	21	AAB37326	Peptide linker #11
97	37	57.8	8	21	AAB01560	Collagenase sensit
98	37	57.8	8	22	AAB48683	Collagenase target
99	37	57.8	8	23	AAU77962	Cleavable peptide
100	37	57.8	8	23	AAU85689	Collagenase (matri
101	37	57.8	10	22	AAB74961	MMP fluorogenic pe
102	37	57.8	12	19	AAW45566	Type-I collagen al
103	37	57.8	25	22	AAG66984	Mutant preproricin
104	37	57.8	27	22	AAG66983	Mutant preproricin
105	37	57.8	29	22	AAG66978	Mutant preproricin
106	37	57.8	865	22	ABB60350	Drosophila melanog
107	36	56.2	8	21	AAB01562	Collagenase sensit
108	36	56.2	8	23	AAU85691	Collagenase (matri
109	36	56.2	171	22	AAU16166	Human novel secret
110	36	56.2	329	22	AAM78574	Human protein SEQ
111	36	56.2	380	22	AAM79558	Human protein SEQ
112	36	56.2	452	20	AAY21627	Ligand binding dom
113	36	56.2	459	22	AAB87356	Human gene 15 enco
114	36	56.2	459	23	ABG65357	Human albumin fusi
115	36	56.2	544	19	AAY10959	H. pylori ORF 06ep
116	36	56.2	548	18	AAW20971	H. pylori cytoplas
117	36	56.2	576	12	AAR12229	TrpE/androgen rece
118	36	56.2	594	22	ABG06795	Novel human diagno
119	36	56.2	614	22	ABG06794	Novel human diagno
120	36	56.2	620	22	AAU16163	Human novel secret
121	36	56.2	657	19	AAY10988	H. pylori ORF 06ep
122	36	56.2	657	20	AAY17172	H. pylori outer me
123	36	56.2	668	19	AAY10978	H. pylori ORF 03ae
124	36	56.2	668	20	AAY17173	H. pylori outer me
125	36	56.2	839	23	AAG68238	Fused androgen rec
126	36	56.2	906	19	AAW71290	Potato starch bran
127	36	56.2	906	19	AAW69300	Potato class B sta
128	36	56.2	918	12	AAR12223	Human androgen rec
129	36	56.2	918	20	AAY33491	Human androgen rec
130	36	56.2	919	10	AAP93109	Human androgen rec
131	36	56.2	919	10	AAP90996	Human androgen rec
132	36	56.2	919	18	AAW14783	Androgen receptor.
133	36	56.2	919	21	AAY78914	Human androgen rec
134	36	56.2	919	23	AAE19061	Human androgen rec
135	36	56.2	1354	22	ABB64256	Drosophila melanog
136	36	56.2	1779	22	ABB60207	Drosophila melanog
137	35	54.7	7	14	AAR38479	Sequence of synthe
138	35	54.7	7	18	AAW27494	Cell binding pepti
139	35	54.7	7	18	AAW18828	Collagen binding p
140	35	54.7	7	20	AAY29994	Collagen cell bind
141	35	54.7	7	21	AAY97995	Synthetic substrat
142	35	54.7	7	22	AAG67405	Synthetic peptide
143	35	54.7	7	22	AAB70112	Synthetic substrat
144	35	54.7	9	22	AAB48687	MMP-1 target cleav
145	35	54.7	170	22	AAU31795	Novel human secret
146	35	54.7	405	22	AAU32537	Novel human secret
147	35	54.7	422	20	AAY02366	Polypeptide identi
148	35	54.7	565	22	ABG30230	Novel human diagno
149	35	54.7	714	22	AAU49034	Propionibacterium
150	35	54.7	751	13	AAR23582	Branching enzyme.
151	35	54.7	759	19	AAW70896	Maize branching en
152	35	54.7	760	22	AAM79717	Human protein SEQ
153	35	54.7	807	20	AAY06916	wSBE I-D4 amino ac
154	35	54.7	822	19	AAW56490	Zea mays starch br
155	35	54.7	827	22	AAM40424	Human polypeptide
156	35	54.7	827	22	AAM40425	Human polypeptide
157	35	54.7	833	21	AAY32466	Maize starch branc
158	35	54.7	844	18	AAW19213	Corn starch branch
159	35	54.7	914	22	AAG68177	TRIO like protein
160	35	54.7	1101	22	AAB82299	Wheat starch branc
161	35	54.7	1494	23	AAU78460	Mouse beta-catenin
162	34.5	53.9	423	19	AAW72185	HSV-2 strain SB5 C
163	34.5	53.9	423	19	AAW72115	HSV-2 strain SB5 C
164	34.5	53.9	423	19	AAW72037	HSV-2 strain SB5 C
165	34	53.1	25	23	ABB80907	Human eotaxin poly
166	34	53.1	53	22	AAU61178	Propionibacterium
167	34	53.1	69	23	ABP04315	Human ORFX protein
168	34	53.1	82	19	AAW44721	Amino acid sequenc
169	34	53.1	97	18	AAW14990	Human eosinocyte C
170	34	53.1	97	18	AAW10099	Human eotaxin. Ho
171	34	53.1	97	21	AAB15794	Human chemokine eo
172	34	53.1	97	23	ABB80913	Human eotaxin poly
173	34	53.1	98	22	ABG10143	Novel human diagno
174	34	53.1	163	21	AAG33071	Arabidopsis thalia
175	34	53.1	182	21	AAG33070	Arabidopsis thalia
176	34	53.1	193	22	ABG05397	Novel human diagno
177	34	53.1	202	20	AAY36993	Protein involved i
178	34	53.1	240	21	AAB24228	Human vesicle asso
179	34	53.1	240	22	AAG81378	Human AFP protein
180	34	53.1	240	22	AAB62393	Human type I membr
181	34	53.1	412	21	AAB26421	Drosophila melanog
182	34	53.1	412	22	ABB68025	Drosophila melanog
183	34	53.1	437	21	AAG54691	Arabidopsis thalia
184	34	53.1	440	12	AAR13946	E12 cDNA prod. (pE
185	34	53.1	481	23	ABB90794	Herbicidally activ
186	34	53.1	578	21	AAG31475	Arabidopsis thalia
187	34	53.1	595	21	AAB43303	Human ORFX ORF3067
188	34	53.1	654	12	AAR13950	E2Aalpha protein.
189	34	53.1	705	20	AAY08305	Human collagen IX
190	34	53.1	710	22	ABB62151	Drosophila melanog
191	34	53.1	736	12	AAR13949	SUP-B27 t(1;19) tr
192	34	53.1	742	12	AAR15158	E2A/pr1 fusion pro
193	34	53.1	792	22	ABB71128	Drosophila melanog
194	34	53.1	819	12	AAR13948	SUP-B27 t(1;19) tr
195	34	53.1	825	12	AAR13951	E2A/pr1 fusion pro
196	34	53.1	945	22	AAU03538	Human protein kina
197	34	53.1	945	23	AAE19157	Human kinase polyp
198	34	53.1	970	22	ABG14448	Novel human diagno
199	34	53.1	1529	14	AAR41732	High molecular wei
200	34	53.1	1601	18	AAW30292	Non-typeable Haemo
201	34	53.1	1651	22	ABG14648	Novel human diagno
202	33	51.6	12	20	AAW94444	Mutant proproricin
203	33	51.6	51	22	AAM83978	Human immune/haema
204	33	51.6	59	20	AAW88835	Polypeptide fragme
205	33	51.6	59	22	ABB50801	Human secreted pro
206	33	51.6	60	23	ABP09189	Human ORFX protein
207	33	51.6	66	22	ABB50806	Human secreted pro
208	33	51.6	84	23	ABP25783	Streptococcus poly
209	33	51.6	93	22	AAO07996	Human polypeptide
210	33	51.6	102	22	AAM06410	Human foetal prote
211	33	51.6	134	22	ABG24762	Novel human diagno
212	33	51.6	140	21	AAB53917	Human colon cancer
213	33	51.6	192	22	ABB61074	Drosophila melanog
214	33	51.6	293	23	ABB93153	Herbicidally activ
215	33	51.6	303	17	AAR77439	Mouse CRKL protein
216	33	51.6	303	19	AAW42071	Human Crk-like pro
217	33	51.6	306	19	AAW44269	Hybrid DNA protein
218	33	51.6	351	22	ABG23962	Novel human diagno
219	33	51.6	481	23	ABB93755	Herbicidally activ
220	33	51.6	522	18	AAW32222	Avian 3-hydroxy-2-
221	33	51.6	565	18	AAW01792	Rat CNK1 protein k
222	33	51.6	569	22	AAM79339	Human protein SEQ
223	33	51.6	569	22	AAM79340	Human protein SEQ
224	33	51.6	594	22	ABB61195	Drosophila melanog
225	33	51.6	628	13	AAR27575	ABF-A from A. nige
226	33	51.6	656	22	ABG26836	Novel human diagno
227	33	51.6	716	22	AAM79757	Human protein SEQ
228	33	51.6	722	22	AAM78773	Human protein SEQ
229	33	51.6	758	20	AAW83021	A heat-resistant m

230	33	51.6	820	15	AAR47468	Branching enzyme o
231	33	51.6	820	15	AAR53228	Rice starch branch
232	33	51.6	1078	16	AAR71704	Collagen alpha 1 (
233	33	51.6	1078	21	AAY96125	Collagen type III
234	33	51.6	1078	23	ABB80736	Collagen type III-
235	33	51.6	1078	23	ABB09628	Amino acid sequenc
236	33	51.6	1078	23	AAE16478	Human collagen alp
237	33	51.6	1132	22	ABG23965	Novel human diagno
238	33	51.6	1186	22	ABG04812	Novel human diagno
239	33	51.6	1196	13	AAR28916	Type III procollag
240	33	51.6	1295	22	ABG15900	Novel human diagno
241	33	51.6	1295	22	ABG23951	Novel human diagno
242	33	51.6	1444	22	ABG15667	Novel human diagno
243	33	51.6	1466	22	ABB50291	Collagen type III
244	33	51.6	1466	22	AAE02533	Bovine alpha1(III)
245	33	51.6	1466	22	AAE02534	Bovine alpha1(III)
246	33	51.6	1466	22	AAE02537	Porcine alpha1(III
247	33	51.6	1466	23	ABB90747	Human Tumour Endot
248	33	51.6	1469	22	ABG15191	Novel human diagno
249	32.5	50.8	2471	20	AAW88481	Candida albicans h
250	32	50.0	6	4	AAP30452	Sequence of collag
251	32	50.0	6	21	AAB01553	Collagenase substr
252	32	50.0	6	23	AAU85682	Collagenase substr
253	32	50.0	7	22	AAB35974	Collagenase cleava
254	32	50.0	30	22	AAB48851	Mutant human insul
255	32	50.0	44	17	AAR87112	Protocadherin clon
256	32	50.0	57	22	ABB16714	Human nervous syst
257	32	50.0	64	22	AAU48042	Propionibacterium
258	32	50.0	82	20	AAY76508	Human ovarian tumo
259	32	50.0	95	21	AAG44009	Zea mays protein f
260	32	50.0	106	22	AAO07060	Human polypeptide
261	32	50.0	116	22	AAU02032	B. thuringiensis t
262	32	50.0	131	18	AAW27646	Secreted protein A
263	32	50.0	131	18	AAW44082	Human secreted pro
264	32	50.0	144	22	AAO02295	Human polypeptide
265	32	50.0	150	22	AAU40751	Propionibacterium
266	32	50.0	150	22	AAU64811	Propionibacterium
267	32	50.0	151	22	AAO12550	Human polypeptide
268	32	50.0	158	22	AAG91583	C glutamicum prote
269	32	50.0	158	22	AAB79007	C. glutamicum SRT
270	32	50.0	162	21	AAB11678	A. vitis hypersens
271	32	50.0	180	22	AAO06983	Human polypeptide
272	32	50.0	191	22	ABG00403	Novel human diagno
273	32	50.0	196	22	ABG02476	Novel human diagno
274	32	50.0	200	22	AAG75429	Human colon cancer
275	32	50.0	212	23	ABG60136	Human DITHP polype
276	32	50.0	214	22	AAM25738	Human protein sequ
277	32	50.0	222	21	AAB40243	Human ORFX ORF7 po
278	32	50.0	259	21	AAB08930	Human secreted pro
279	32	50.0	275	22	ABG19671	Novel human diagno
280	32	50.0	297	22	AAU34635	E. coli cellular p
281	32	50.0	310	22	AAG92086	C glutamicum prote
282	32	50.0	339	22	AAG89996	C glutamicum prote
283	32	50.0	339	22	AAB79350	Corynebacterium gl
284	32	50.0	339	22	AAB79363	Corynebacterium gl
285	32	50.0	342	23	AAE22547	CTA1-DD fusion pro
286	32	50.0	346	22	ABG20556	Novel human diagno
287	32	50.0	381	21	AAG22405	Arabidopsis thalia
288	32	50.0	396	22	AAU42248	Propionibacterium
289	32	50.0	416	21	AAG12795	Arabidopsis thalia
290	32	50.0	418	21	AAG12794	Arabidopsis thalia
291	32	50.0	421	20	AAY37124	Chlamydia trachoma
292	32	50.0	421	23	ABB94354	Chlamydia trachoma
293	32	50.0	423	21	AAG12793	Arabidopsis thalia
294	32	50.0	443	20	AAY13946	Human transmembran
295	32	50.0	443	23	ABB09719	Amino acid sequenc
296	32	50.0	444	21	AAB37992	Human secreted pro
297	32	50.0	449	22	AAB70492	Human eIF3 protein
298	32	50.0	492	8	AAP70387	gag nucleoprotein
299	32	50.0	541	22	AAB49710	Small round struct
300	32	50.0	585	23	ABB91077	Herbicidally activ
301	32	50.0	639	22	ABG26622	Novel human diagno
302	32	50.0	873	19	AAW49031	Human Prt1-like su
303	32	50.0	873	23	ABB76911	Human eIF3p110, a
304	32	50.0	948	21	AAG31240	Arabidopsis thalia
305	32	50.0	969	21	AAG31239	Arabidopsis thalia
306	32	50.0	1060	22	ABB61766	Drosophila melanog
307	32	50.0	1064	20	AAW87759	Arabidopsis lysine
308	32	50.0	1064	21	AAG31238	Arabidopsis thalia
309	32	50.0	1077	21	AAY70518	Clostridium thermo
310	32	50.0	1265	23	AAE22546	CTA1-OVA-DD fusion
311	32	50.0	1288	18	AAW26328	Mouse alpha-1 coll
312	32	50.0	1288	20	AAW92297	Mouse alpha-1 (XVI
313	32	50.0	1336	23	AAU92973	Arabidopsis transc
314	32	50.0	1339	22	ABG21500	Novel human diagno
315	32	50.0	1389	22	AAG84989	Shrimp white spot
316	32	50.0	1551	22	ABB64459	Drosophila melanog
317	32	50.0	1805	13	AAR27204	Rat nestin. Rattu
318	32	50.0	1805	15	AAR60126	Rat nestin protein
319	32	50.0	1958	22	AAG65784	Mouse SNS1 ion cha
320	32	50.0	6239	21	AAB23750	S. avermitilis ave
321	32	50.0	6239	22	AAG65265	Streptomyces averm
322	31.5	49.2	80	22	AAU46675	Propionibacterium
323	31.5	49.2	148	22	AAO09738	Human polypeptide
324	31.5	49.2	632	22	AAB96100	Putative 3'-phosph
325	31.5	49.2	807	19	AAW70461	South African Arbo
326	31.5	49.2	807	19	AAW70463	Girdwood S.A.virus
327	31.5	49.2	807	19	AAW70465	Sindbis virus nsP2
328	31	48.4	8	21	AAB01564	Collagenase sensit
329	31	48.4	8	21	AAB01565	Collagenase sensit
330	31	48.4	8	23	AAU85693	Collagenase (matri
331	31	48.4	8	23	AAU85694	Collagenase (matri
332	31	48.4	12	17	AAR90342	Macrophage-colony
333	31	48.4	21	23	AAU88559	Insulin/insulin-li
334	31	48.4	39	22	ABG27946	Novel human diagno
335	31	48.4	40	22	ABB50596	Human secreted pro
336	31	48.4	44	22	ABB31113	Peptide #3764 enco
337	31	48.4	44	22	ABB36315	Peptide #3821 enco
338	31	48.4	44	22	AAM69468	Human bone marrow
339	31	48.4	44	22	AAM17311	Peptide #3745 enco
340	31	48.4	44	22	AAM29809	Peptide #3846 enco
341	31	48.4	44	22	AAM04990	Peptide #3672 enco
342	31	48.4	44	23	ABG39099	Human peptide enco
343	31	48.4	50	22	AAU57403	Propionibacterium
344	31	48.4	54	23	AAU75619	P. aeruginosa acet
345	31	48.4	58	22	AAU42839	Propionibacterium
346	31	48.4	63	23	ABP32941	Human ORF1914 prot
347	31	48.4	64	22	AAU43649	Propionibacterium
348	31	48.4	64	22	AAU52415	Propionibacterium
349	31	48.4	69	23	ABP10796	Human ORFX protein
350	31	48.4	83	22	ABG27465	Novel human diagno
351	31	48.4	87	23	ABP02821	Human ORFX protein
352	31	48.4	89	22	AAM90527	Human immune/haema
353	31	48.4	90	19	AAY86059	S. pneumoniae deri
354	31	48.4	91	22	ABG07499	Novel human diagno
355	31	48.4	91	22	ABG20373	Novel human diagno
356	31	48.4	104	22	AAO01803	Human polypeptide
357	31	48.4	108	21	AAY70574	Salmonella Pathoge
358	31	48.4	110	21	AAB53909	Human colon cancer
359	31	48.4	131	22	AAM89945	Human immune/haema
360	31	48.4	163	22	AAU36451	Pseudomonas aerugi
361	31	48.4	170	8	AAP70262	Beta-glucuronidase
362	31	48.4	170	9	AAP80057	Beta-glucuronidase
363	31	48.4	170	11	AAR06681	N-terminal of the
364	31	48.4	171	20	AAY37165	Amino acid sequenc
365	31	48.4	173	22	ABG22208	Novel human diagno
366	31	48.4	188	19	AAW38648	S. pneumoniae anth
367	31	48.4	200	21	AAG07793	Arabidopsis thalia
368	31	48.4	209	21	AAG58333	Arabidopsis thalia
369	31	48.4	209	22	AAU04857	Micromonospora eve
370	31	48.4	214	21	AAB43240	Human ORFX ORF3004
371	31	48.4	220	21	AAY93473	Amino acid sequenc
372	31	48.4	220	21	AAY93474	Amino acid sequenc
373	31	48.4	220	23	ABG60594	Human potassium ch
374	31	48.4	220	23	ABG60595	Monkey potassium c
375	31	48.4	225	21	AAY93476	Amino acid sequenc

376	31	48.4	225	22	AAB92634	Human protein sequ
377	31	48.4	225	23	ABG60597	Rat potassium chan
378	31	48.4	225	23	ABG60618	Human potassium ch
379	31	48.4	227	22	ABG19258	Novel human diagno
380	31	48.4	232	21	AAG07792	Arabidopsis thalia
381	31	48.4	234	21	AAB32565	Eucalyptus grandis
382	31	48.4	234	21	AAG06725	Arabidopsis thalia
383	31	48.4	234	21	AAG40390	Arabidopsis thalia
384	31	48.4	246	21	AAG21324	Arabidopsis thalia
385	31	48.4	248	22	ABB10312	Human cDNA SEQ ID
386	31	48.4	252	21	AAY93471	Amino acid sequenc
387	31	48.4	252	21	AAY93472	Amino acid sequenc
388	31	48.4	252	21	AAY93475	Amino acid sequenc
389	31	48.4	252	21	AAY93482	Amino acid sequenc
390	31	48.4	252	23	ABG60592	Human potassium ch
391	31	48.4	252	23	ABG60593	Rat potassium chan
392	31	48.4	252	23	ABG60596	Rat potassium chan
393	31	48.4	257	21	AAY93469	Amino acid sequenc
394	31	48.4	257	23	ABG60590	Rat potassium chan
395	31	48.4	262	21	AAG07791	Arabidopsis thalia
396	31	48.4	263	19	AAW64210	S. aureus protein
397	31	48.4	265	17	AAW04537	Vesiculovirus nons
398	31	48.4	265	22	AAB59296	Vesicular stomatit
399	31	48.4	267	23	ABB92613	Herbicidally activ
400	31	48.4	270	9	AAP83146	Protein A with C-t
401	31	48.4	270	21	AAY93468	Amino acid sequenc
402	31	48.4	270	21	AAY93470	Amino acid sequenc
403	31	48.4	270	23	ABG60589	Human potassium ch
404	31	48.4	270	23	ABG60591	Mouse potassium ch
405	31	48.4	270	23	ABG60617	Rat potassium chan
406	31	48.4	271	21	AAG07369	Arabidopsis thalia
407	31	48.4	272	21	AAG07368	Arabidopsis thalia
408	31	48.4	277	22	AAM78673	Human protein SEQ
409	31	48.4	280	22	AAU44319	Propionibacterium
410	31	48.4	282	21	AAG11255	Arabidopsis thalia
411	31	48.4	282	21	AAG50262	Arabidopsis thalia
412	31	48.4	283	22	ABG24807	Novel human diagno
413	31	48.4	284	18	AAW27703	E. coli AIDA-I pro
414	31	48.4	284	22	ABG27459	Novel human diagno
415	31	48.4	287	22	AAM78772	Human protein SEQ
416	31	48.4	297	22	AAB65620	Novel protein kina
417	31	48.4	305	17	AAG78360	Humicola insolens
418	31	48.4	307	21	AAG21323	Arabidopsis thalia
419	31	48.4	313	21	AAG06724	Arabidopsis thalia
420	31	48.4	313	21	AAG40389	Arabidopsis thalia
421	31	48.4	313	22	ABB62420	Drosophila melanog
422	31	48.4	318	21	AAG21322	Arabidopsis thalia
423	31	48.4	324	19	AAW64212	Oleosin-protein A
424	31	48.4	324	20	AAW88762	Polypeptide fragme
425	31	48.4	324	22	ABB50585	Human secreted pro
426	31	48.4	327	21	AAG11254	Arabidopsis thalia
427	31	48.4	327	21	AAG50261	Arabidopsis thalia
428	31	48.4	332	22	ABG24501	Novel human diagno
429	31	48.4	339	21	AAG11253	Arabidopsis thalia
430	31	48.4	339	21	AAG50260	Arabidopsis thalia
431	31	48.4	344	23	ABB06343	Human interferon a
432	31	48.4	345	5	AAP40674	Sequence encoded b
433	31	48.4	345	6	AAP50873	Methionyl-syntheti
434	31	48.4	348	23	ABP26113	Streptococcus poly
435	31	48.4	352	23	ABB06344	Human interferon o
436	31	48.4	369	22	ABG01143	Novel human diagno
437	31	48.4	369	22	ABG13946	Novel human diagno
438	31	48.4	374	22	ABB66805	Drosophila melanog
439	31	48.4	382	22	AAM78771	Human protein SEQ
440	31	48.4	393	21	AAG06723	Arabidopsis thalia
441	31	48.4	393	21	AAG40388	Arabidopsis thalia
442	31	48.4	393	23	ABB91164	Herbicidally activ
443	31	48.4	394	22	ABB70098	Drosophila melanog
444	31	48.4	400	21	AAG47007	Arabidopsis thalia
445	31	48.4	403	23	ABB91163	Herbicidally activ
446	31	48.4	409	16	AAR78525	Protein A-calmodul
447	31	48.4	411	21	AAY67350	Maize calcium-depe
448	31	48.4	411	22	AAM79755	Human protein SEQ
449	31	48.4	411	22	AAM79756	Human protein SEQ
450	31	48.4	413	17	AAR95247	Transcription fact
451	31	48.4	413	19	AAW48390	Homo sapiens E2F4
452	31	48.4	413	22	AAB96790	Putative P. abyssi
453	31	48.4	417	22	AAU51152	Propionibacterium
454	31	48.4	428	22	AAE05748	Clostridium cellul
455	31	48.4	432	22	AAG82924	S. epidermidis ope
456	31	48.4	440	9	AAP83145	Lymphotoxin/protei
457	31	48.4	456	21	AAG40134	Arabidopsis thalia
458	31	48.4	466	22	AAB86958	D. melanogaster pe
459	31	48.4	467	23	ABP40456	Staphylococcus epi
460	31	48.4	473	23	ABB93249	Herbicidally activ
461	31	48.4	478	21	AAG40133	Arabidopsis thalia
462	31	48.4	480	22	ABB66686	Drosophila melanog
463	31	48.4	480	22	ABB70717	Drosophila melanog
464	31	48.4	496	22	AAU36610	Staphylococcus aur
465	31	48.4	501	22	AAU61400	Propionibacterium
466	31	48.4	508	22	AAU34299	Staphylococcus aur
467	31	48.4	520	22	AAU37216	Staphylococcus aur
468	31	48.4	521	23	ABP60949	Homo sapiens thior
469	31	48.4	524	22	AAM40332	Human polypeptide
470	31	48.4	527	22	ABG23494	Novel human diagno
471	31	48.4	530	22	AAU48619	Propionibacterium
472	31	48.4	543	22	AAG90269	C glutamicum prote
473	31	48.4	543	22	AAB79880	Corynebacterium gl
474	31	48.4	543	22	AAB80070	Corynebacterium gl
475	31	48.4	547	23	ABP35607	Fungal ZBC protein
476	31	48.4	575	22	AAG91070	C glutamicum prote
477	31	48.4	575	22	AAB76541	Corynebacterium gl
478	31	48.4	575	22	AAB76542	Corynebacterium gl
479	31	48.4	585	8	AAP70282	Protein A - beta-g
480	31	48.4	588	21	AAG47006	Arabidopsis thalia
481	31	48.4	593	21	AAB43002	Human ORFX ORF2766
482	31	48.4	593	22	AAM40333	Human polypeptide
483	31	48.4	594	21	AAG47005	Arabidopsis thalia
484	31	48.4	602	9	AAP82948	Beta-glucuronidase
485	31	48.4	602	14	AAR43387	Beta-glucuronidase
486	31	48.4	602	19	AAW42429	Escherichia coli b
487	31	48.4	603	20	AAW93824	Human GUS protein.
488	31	48.4	603	20	AAW93827	E. coli GUS protei
489	31	48.4	603	21	AAB28431	Human beta-glucoro
490	31	48.4	603	23	ABB84107	GUS protein #1. U
491	31	48.4	603	23	ABB84108	GUS protein #2. U
492	31	48.4	610	22	AAB68350	Human NADH oxidase
493	31	48.4	626	22	ABB63653	Drosophila melanog
494	31	48.4	648	20	AAY29156	Amino acid sequenc
495	31	48.4	652	21	AAB58959	Breast and ovarian
496	31	48.4	675	22	AAM40778	Human polypeptide
497	31	48.4	692	22	AAB65619	Novel protein kina
498	31	48.4	718	20	AAW80991	Helicobacter pylor
499	31	48.4	726	23	ABB97422	Novel human protei
500	31	48.4	766	23	AAE21719	Human PKIN-14 prot

ALIGNMENTS

RESULT 1
AAW94414
ID AAW94414 standard; peptide; 12 AA.
XX
AC AAW94414;
XX
DT 15-APR-1999 (first entry)
XX
DE Cancer protease-sensitive amino acid linker pAP-219 and pAP-220.
XX
KW Ricin-like toxin; cancer; viral infection; parasitic infection;
KW linker; B chain; A chain; protease; fungal infection; malaria;
KW leucocyte proliferation; cytomegalovirus; herpes; hepatitis;
KW rhinovirus; laryngeotracheitis; poliomyelitis; varicella zoster;
KW cystic fibrosis; multiple sclerosis.
XX

OS Unidentified.
OS Synthetic.
XX
PN WO9849311-A2.
XX
PD 05-NOV-1998.
XX
PF 30-APR-1998; 98WO-CA00394.
XX
PR 29-OCT-1997; 97US-0063715.
PR 30-APR-1997; 97US-0045148.
XX
PA (DNOV-) DE NOVO ENZYME CORP.
XX
PI Borgford T;
XX
DR WPI; 1999-009431/01.
XX
PT New nucleic acid encoding ricin-like toxin with an interchain linker
PT cleaved by protease - is specific for diseased cells, useful for,
PT e.g. killing selectively cancer or infected cells
XX
PS Claim 24; Fig 21; 352pp; English.
XX
CC The present invention describes new purified and isolated nucleic acids
CC (I) encoding: (i) the A and B chains of a ricin-like toxin (II); and
CC (ii) a heterologous linker, joining the two chains and including a
CC cleavage recognition site for a disease-specific protease (III). Also
CC described are: (1) plasmids or baculovirus transfer vectors that contain
CC (I); and (2) recombinant protein (IV) consisting of the A and B chains
CC of (II) joined by the specified linker. (IV), produced by expression of
CC (I) in host cells, are used to inhibit or kill diseased cells that
CC produce (III), particularly for treating cancers (e.g. leucocyte
CC proliferation; cancer of ovary, pancreas, breast or prostate; glioma) or
CC infections caused by fungi, parasites (e.g. malaria) or viruses (e.g.
CC cytomegalovirus (CMV), herpes, hepatitis, rhinovirus, laryngeotracheitis,
CC poliomyelitis or varicella zoster), also cystic fibrosis and multiple
CC sclerosis. Alternatively, (I) is used to express (IV) in vivo. (IV) is
CC toxic specifically for (III)-expressing cells and does not depend for
CC specificity on a cell-binding component. When used to treat virus-
CC infected cells, transcytosis and cytotoxicity of (IV) are increased by
CC retrograde translocation from endoplasmic reticulum to cytoplasm (which
CC some viruses exploit to avoid immune detection), so selectivity and
CC safety are further improved. (IV) are not toxic until chain A is
CC released and this occurs only in target cells. The present sequence
CC represents a specifically claimed cancer protease-sensitive amino acid
CC linker from the present invention.
XX
SQ Sequence 12 AA;

Query Match 100.0%; Score 64; DB 20; Length 12;
Best Local Similarity 100.0%; Pred. No. 8.8e-05;
Matches 12; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 SPQGIAGQRNFN 12
||||||||||||
Db 1 SPQGIAGQRNFN 12

RESULT 2
AAG66970
ID AAG66970 standard; Peptide; 21 AA.
XX
AC AAG66970;
XX
DT 29-OCT-2001 (first entry)
XX
DE Mutant preproricin linker region of PAP303 (MMP-9).
XX
KW Castor oil plant; ricin; preproricin; cytostatic; antiinflammatory;
KW antirheumatic; antiarthritic; antiarteriosclerotic; neuroprotective;
KW toxin; linker; protease-specific cleavage site; cancer;
KW inflammatory disease; mutant; variant; matrix metalloproteinase 9; MMP-9;
KW UPA.
XX
OS Ricinus communis.
OS Synthetic.
XX
PN WO200125267-A2.
XX
PD 12-APR-2001.
XX
PF 04-OCT-2000; 2000WO-CA01162.
XX
PR 04-OCT-1999; 99US-0157807.
PR 14-APR-2000; 2000US-0197409.
XX
PA (TWIN-) TWINSTRAND THERAPEUTICS INC.
XX
PI Braun C, Purac A, Borgford T;
XX
DR WPI; 2001-300164/31.
XX
PT New proteins comprising A and B chains of ricin-like toxin linked by a
PT novel linker sequence that is specifically cleaved and activated by
PT protease specific to cancer is useful for treating inflammation and
PT cancer -
XX
PS Claim 42; Fig 3C; 146pp; English.
XX
CC The invention relates to a recombinant protein comprising an A chain of
CC a ricin-like toxin, a B chain of a ricin-like toxin and a heterologous
CC linker that links the A and B chains. The linker sequence contains
CC a cleavage recognition site for a specific protease such as those
CC found in inflammatory cells and cancer cells. The protein is useful for
CC inhibiting or destroying cells expressing a specific protease, e.g.
CC cancer cells found in T- and B-cell lymphoproliferative diseases, ovarian
CC cancer, pancreatic cancer, head and neck cancer, squamous cell carcinoma,
CC gastrointestinal cancer, breast cancer, prostate cancer or non-small cell
CC lung cancer, or cells found in rheumatoid arthritis, atherosclerosis,
CC Crohn's disease or central nervous system disease. The protein is useful
CC for treating cancer and inflammation. The protein has the specificity
CC for cells that contain a specific protease, including those of
CC inflammatory disorders and cancer cells, without the need for a cell
CC binding component. The present sequence is one of a number of
CC variant linkers generated from the wild type preproricin linker. The
CC variant linkers contain a cleavage recognition site for either matrix
CC metalloproteinase 9 (MMP-9) or UPA.
XX
SQ Sequence 21 AA;

Query Match 100.0%; Score 64; DB 22; Length 21;
Best Local Similarity 100.0%; Pred. No. 0.00015;
Matches 12; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 SPQGIAGQRNFN 12
||||||||||||
Db 2 SPQGIAGQRNFN 13

RESULT 3
AAG66968
ID AAG66968 standard; Peptide; 29 AA.
XX
AC AAG66968;
XX
DT 29-OCT-2001 (first entry)
XX
DE Mutant preproricin linker region of PAP301 (MMP-9).
XX
KW Castor oil plant; ricin; preproricin; cytostatic; antiinflammatory;
KW antirheumatic; antiarthritic; antiarteriosclerotic; neuroprotective;
KW toxin; linker; protease-specific cleavage site; cancer;
KW inflammatory disease; mutant; variant; matrix metalloproteinase 9; MMP-9;
KW UPA.
XX

OS Ricinus communis.
OS Synthetic.
XX
PN WO200125267-A2.
XX
PD 12-APR-2001.
XX
PF 04-OCT-2000; 2000WO-CA01162.
XX
PR 04-OCT-1999; 99US-0157807.
PR 14-APR-2000; 2000US-0197409.
XX
PA (TWIN-) TWINSTRAND THERAPEUTICS INC.
XX
PI Braun C, Purac A, Borgford T;
XX
DR WPI; 2001-300164/31.
XX
PT New proteins comprising A and B chains of ricin-like toxin linked by a
PT novel linker sequence that is specifically cleaved and activated by
PT protease specific to cancer is useful for treating inflammation and
PT cancer -
XX
PS Claim 42; Fig 1C; 146pp; English.
XX
CC The invention relates to a recombinant protein comprising an A chain of
CC a ricin-like toxin, a B chain of a ricin-like toxin and a heterologous
CC linker that links the A and B chains. The linker sequence contains
CC a cleavage recognition site for a specific protease such as those
CC found in inflammatory cells and cancer cells. The protein is useful for
CC inhibiting or destroying cells expressing a specific protease, e.g.
CC cancer cells found in T- and B-cell lymphoproliferative diseases, ovarian
CC cancer, pancreatic cancer, head and neck cancer, squamous cell carcinoma,
CC gastrointestinal cancer, breast cancer, prostate cancer or non-small cell
CC lung cancer, or cells found in rheumatoid arthritis, atherosclerosis,
CC Crohn's disease or central nervous system disease. The protein is useful
CC for treating cancer and inflammation. The protein has the specificity
CC for cells that contain a specific protease, including those of
CC inflammatory disorders and cancer cells, without the need for a cell
CC binding component. The present sequence is one of a number of
CC variant linkers generated from the wild type preproricin linker. The
CC variant linkers contain a cleavage recognition site for either matrix
CC metalloproteinase 9 (MMP-9) or UPA.
XX
SQ Sequence 29 AA;

Query Match 67.2%; Score 43; DB 22; Length 29;
Best Local Similarity 72.7%; Pred. No. 1.2;
Matches 8; Conservative 1; Mismatches 2; Indels 0; Gaps 0;

Qy 2 PQGIAGQRNFN 12
| |: |||||
Db 11 PLGMWGQRNFN 21

RESULT 4
AAG66974
ID AAG66974 standard; Peptide; 29 AA.
XX
AC AAG66974;
XX
DT 29-OCT-2001 (first entry)
XX
DE Mutant preproricin linker region of PAP309 (MMP-9).
XX
KW Castor oil plant; ricin; preproricin; cytostatic; antiinflammatory;
KW antirheumatic; antiarthritic; antiarteriosclerotic; neuroprotective;
KW toxin; linker; protease-specific cleavage site; cancer;
KW inflammatory disease; mutant; variant; matrix metalloproteinase 9; MMP-9;
KW UPA.
XX
OS Ricinus communis.
OS Synthetic.
XX
PN WO200125267-A2.
XX
PD 12-APR-2001.
XX
PF 04-OCT-2000; 2000WO-CA01162.
XX
PR 04-OCT-1999; 99US-0157807.
PR 14-APR-2000; 2000US-0197409.
XX
PA (TWIN-) TWINSTRAND THERAPEUTICS INC.
XX
PI Braun C, Purac A, Borgford T;
XX
DR WPI; 2001-300164/31.
XX
PT New proteins comprising A and B chains of ricin-like toxin linked by a
PT novel linker sequence that is specifically cleaved and activated by
PT protease specific to cancer is useful for treating inflammation and
PT cancer -
XX
PS Claim 42; Fig 7C; 146pp; English.
XX
CC The invention relates to a recombinant protein comprising an A chain of
CC a ricin-like toxin, a B chain of a ricin-like toxin and a heterologous
CC linker that links the A and B chains. The linker sequence contains
CC a cleavage recognition site for a specific protease such as those
CC found in inflammatory cells and cancer cells. The protein is useful for
CC inhibiting or destroying cells expressing a specific protease, e.g.
CC cancer cells found in T- and B-cell lymphoproliferative diseases, ovarian
CC cancer, pancreatic cancer, head and neck cancer, squamous cell carcinoma,
CC gastrointestinal cancer, breast cancer, prostate cancer or non-small cell
CC lung cancer, or cells found in rheumatoid arthritis, atherosclerosis,
CC Crohn's disease or central nervous system disease. The protein is useful
CC for treating cancer and inflammation. The protein has the specificity
CC for cells that contain a specific protease, including those of
CC inflammatory disorders and cancer cells, without the need for a cell
CC binding component. The present sequence is one of a number of
CC variant linkers generated from the wild type preproricin linker. The
CC variant linkers contain a cleavage recognition site for either matrix
CC metalloproteinase 9 (MMP-9) or UPA.
XX
SQ Sequence 29 AA;

Query Match 67.2%; Score 43; DB 22; Length 29;
Best Local Similarity 72.7%; Pred. No. 1.2;
Matches 8; Conservative 1; Mismatches 2; Indels 0; Gaps 0;

Qy 2 PQGIAGQRNFN 12
| |: |||||
Db 11 PLGMWGQRNFN 21

RESULT 5
AAW17687
ID AAW17687 standard; peptide; 8 AA.
XX
AC AAW17687;
XX
DT 07-JUL-1997 (first entry)
XX
DE Substrate #1 for mammalian matrix metalloproteinase-1.
XX
KW Enzyme substrate; MMP-1; protease; tissue abnormality; mesoporphyrin IX;
KW malignancy; mammalian matrix metalloproteinase-1; bacterial collagenase;
KW human interstitial collagenase; cathespin D; plasmin; fungal infection;
KW human collagenase Type IV; mammalian matrix proteinase-2; tissue injury;
KW 72 kd gelatinase; MMP-2; intravascular clotting; bacterial infection;
KW extravascular clotting abnormality; protozoal infection; therapy;
KW parasitic infection.
XX
OS Synthetic.
XX

```
PN   US5618790-A.
XX
PD   08-APR-1997.
XX
PF   05-OCT-1990;   90US-0593867.
XX
PR   16-MAR-1994;   94US-0213897.
PR   05-OCT-1990;   90US-0593867.
PR   10-FEB-1992;   92US-0833183.
XX
PA   (TOOH ) UNIV QUEENS KINGSTON.
XX
PI   Kennedy JC,  Pottier RH,  Ringuet M;
XX
DR   WPI; 1997-225448/20.
XX
PT   Conjugate system for delivering therapeutic or diagnostic agent to
PT   tissue abnormality site  - useful to treat or detect abnormalities
PT   caused by, e.g. malignancy or tissue injuries
XX
PS   Claim 5; Column 18; 10pp; English.
XX
CC   AAW17687-W17698 represent synthetic substrates for proteases known to be
CC   active in and/or immediately adjacent to certain specified cell or
CC   tissue abnormalities. This sequence is a substrate for mammalian matrix
CC   metalloproteinase-1 (MMP-1), which is also known as human interstitial
CC   collagenase. These sequences can be used in the conjugate system of the
CC   invention. The conjugate system is for delivering a therapeutic or
CC   diagnostic agent to a tissue abnormality site (TAS) in a patient. The
CC   system comprises a lipophilic or amphiphilic agent, covalently linked to
CC   a protease sensitive polypeptide (such as this sequence) having an amino
CC   acid sequence readily cleavable by a protease active at the TAS, but not
CC   at a normal tissue site, and a solubility modifier conjugated to the
CC   protease sensitive polypeptide. Peptides sensitive to cleavage by
CC   bacterial collagenase, cathespin D, plasmin, human collagenase Type IV
CC   (also known as 72 kd gelatinase, mammalian matrix proteinase-2, or
CC   MMP-2), or mesoporphyrin IX, can also be used in the system. The system
CC   can be used to treat or detect tissue abnormalities caused by
CC   malignancy, tissue injuries, intravascular or extravascular clotting
CC   abnormalities or bacterial, fungal, protozoal or parasitic infections.
XX
SQ   Sequence   8 AA;

  Query Match             65.6%;  Score 42;  DB 18;  Length 8;
  Best Local Similarity   100.0%;  Pred. No. 7.8e+05;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       2 PQGIAGQR 9
           ||||||||
Db       1 PQGIAGQR 8


RESULT 6
AAY97994
ID   AAY97994 standard; peptide; 8 AA.
XX
AC   AAY97994;
XX
DT   11-SEP-2000  (first entry)
XX
DE   Synthetic substrate peptide #1, used to characterise a novel protease.
XX
KW   Synthetic peptide substrate; enzyme characterisation; protease;
KW   collagenase activity; gelatin; incomplete degradation; Aureobacterium;
KW   strain MIM-CG-9535-I; foodstuff manufacture; cosmetic.
XX
OS   Synthetic.
XX
FH   Key             Location/Qualifiers
FT   Modified-site   1
FT                   /note= "Conjugated to dinitrophenol (DNP)"
FT   Misc-difference 8
FT                   /note= "D-form residue"
XX
PN   JP2000102381-A.
XX
PD   11-APR-2000.
XX
PF   30-SEP-1998;   98JP-0277901.
XX
PR   30-SEP-1998;   98JP-0277901.
XX
PA   (DAII-) DAIICHI KAKAGU YAKUHIN KK.
PA   (MIYA-) MIYAGI KAGAKU KOGYO KK.
XX
DR   WPI; 2000-332081/29.
XX
PT   Novel protease having limited degradation activity for thermally
PT   denatured collagen and non-denatured solubilized collagen, produced
PT   from specific microorganism strain, has specific enzymological
PT   properties  -
XX
PS   Claim 1; Page 2; 9pp; Japanese.
XX
CC   The invention relates to a novel protease from Aureobacterium strain
CC   MIM-CG-9535-I (FERMP-16867). Its molecular weight is 23 kD (plus or
CC   minus 2 kD) based on SDS-PAGE (sodium dodecyl sulphate polyacrylamide
CC   gel electrophoresis). The protease has limited degradation activity for
CC   thermally denatured collagen (gelatin) and non-denatured solubilised
CC   collagen of molecular weights of 130 kD and 300 kD respectively. Gelatin
CC   and non-denatured collagen are degraded to products of molecular weights
CC   of 70 kD and 40 kD respectively. The optimum pH and temperature of the
CC   protease is pH 5.5-7 and 37-40 degrees Celsius. The enzyme is able to
CC   partially degrade the synthetic substrate DNP-Pro-Gln-Gly-Ile-Ala-Gly-
CC   Gln-D-Arg (AAY97994) which contains a proline residue, but it does not
CC   appear to degrade the synthetic substrate DNP-Gln-Gly-Ile-Ala-Gly-Gln-
CC   D-Arg (AAY97995) which does not contain a proline. The protease is
CC   inhibited by O-phenanthroline and L-cysteine, and is also partially
CC   inhibited by ethylene-diamine tetraacetic acid, N-ethylmaleimide,
CC   iodoacetamide and phenyl methane sulphonylfluoride. The novel protease
CC   is useful for degrading high molecular weight gelatin and solubilised
CC   collagen into smaller units. These can be used in foodstuffs and
CC   cosmetics as gelatinisers, foaming agents and thickeners, and can also
CC   be used in the manufacture of medicine capsules. The decomposition
CC   products of the novel protease have low antigenicity, good solubility
CC   and low gelling strength, and are easy to form into films and capsules.
CC   Sequences AAY97994 and AAY97995 represent synthetic protease substrates
CC   used to characterise the activity of the novel protease of the
CC   invention.
XX
SQ   Sequence   8 AA;

  Query Match             65.6%;  Score 42;  DB 21;  Length 8;
  Best Local Similarity   100.0%;  Pred. No. 7.8e+05;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       2 PQGIAGQR 9
           ||||||||
Db       1 PQGIAGQR 8


RESULT 7
AAU07721
ID   AAU07721 standard; peptide; 8 AA.
XX
AC   AAU07721;
XX
DT   21-NOV-2001  (first entry)
XX
DE   Human leukaemia cell HL-60 45 kD matrix metalloprotease substrate.
XX
KW   Human leukaemia cell; HL-60; 45 kD matrix metalloprotease;
KW   protease cleavage site; cytostatic; antirheumatic;
KW   antirheumatic; antiarthritic; immunosuppressive; antiinflammatory;
KW   anti-HIV; virucide; viral display; gene therapy; cancer; inflammation;
KW   rheumatoid arthritis; autoimmune disease; infection; AIDS;
```

```
KW   acquired immunodeficiency syndrome; herpes; hepatitis;
KW   protease inhibitor; drug screening.
XX
OS   Synthetic.
XX
FH   Key             Location/Qualifiers
FT   Cleavage-site   5..6
FT                   /label= Protease_cleavage_site
XX
PN   WO200162980-A1.
XX
PD   30-AUG-2001.
XX
PF   23-FEB-2001; 2001WO-US05859.
XX
PR   25-FEB-2000; 2000US-0185203.
XX
PA   (CAMB-) CAMBRIDGE DRUG DISCOVERY LTD.
XX
PI   Russell SJ,  Chadwick MP;
XX
DR   WPI; 2001-541706/60.
XX
PT   Identifying protease inhibitors by assaying for the presence of a
PT   transferable label from a viral display package in the presence of test
PT   compound, where an increase in cell label indicates the compound as a
PT   protease inhibitor  -
XX
PS   Disclosure; Page 10; 46pp; English.
XX
CC   The invention relates to identifying a test substance for the ability to
CC   inhibit a protease by contacting a protease-containing target cell with a
CC   viral display package (comprising a receptor-binding polypeptide which
CC   binds to a receptor on the surface of the cell, a protease cleavage site
CC   for the protease expressed by the cell, and a fusion-mediating
CC   polypeptide, such that proteolytic cleavage of the cleavage site does not
CC   permit substantial transfer of the transferable label from the phage
CC   package to the cell), and detecting a transferable label to indicate if
CC   the substance is a protease inhibitor. The method is useful for
CC   identifying a test substance for its ability to inhibit a protease. The
CC   delivery of an expressible polynucleotide to a target cell is also
CC   possible, and both methods are applicable for a number of target cells.
CC   The methods are useful for therapeutic purposes and as a model system for
CC   optimising delivery of transferable labels. The protease inhibitors
CC   identified are useful for treating cancer, inflammation, rheumatoid
CC   arthritis, autoimmune diseases, infections including AIDS (acquired
CC   immunodeficiency syndrome), herpes and hepatitis. A whole range of
CC   proteins, peptides, antisense transcripts and ribozyme sequences can be
CC   encoded within an expressible polynucleotide (i.e. a gene therapy
CC   technique) and delivered to a target cell for a therapeutic effect. The
CC   target cells may also be cells infected by pathogens such as HIV virus,
CC   rhinovirus, herpes virus, hepatitis virus or other infectious agents
CC   which expresses proteases. The present sequence is a synthetic
CC   substrate peptide which is cleaved by a 45 kD matrix metalloprotease
CC   secreted by HL-60 human leukaemia cells. This peptide can be used
CC   in the method of the invention.
XX
SQ   Sequence   8 AA;

  Query Match             65.6%;  Score 42;  DB 22;  Length 8;
  Best Local Similarity   100.0%;  Pred. No. 7.8e+05;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       2 PQGIAGQR 9
           ||||||||
Db       1 PQGIAGQR 8


RESULT 8
AAB70111
ID   AAB70111 standard; peptide; 8 AA.
XX
AC   AAB70111;
XX
DT   18-MAY-2001  (first entry)
XX
DE   Synthetic collagenase substrate of novel protease enzyme.
XX
KW   Collagenase; gelatin; protease; jelly production;
KW   gelatin capsule synthesis; drug synthesis.
XX
OS   Synthetic.
XX
FH   Key             Location/Qualifiers
FT   Modified-site   1
FT                   /note= "attached to DNP"
XX
PN   JP2000325095-A.
XX
PD   28-NOV-2000.
XX
PF   18-MAY-1999;   99JP-0137528.
XX
PR   18-MAY-1999;   99JP-0137528.
XX
PA   (MIYA-) MIYAGI KAGAKU KOGYO KK.
PA   (DAII-) DAIICHI KAKAGU YAKUHIN KK.
XX
DR   WPI; 2001-228834/24.
XX
PT   Preparing degraded gelatin peptides useful in drugs, cosmetics and
PT   foodstuffs, using novel protease which cuts protein at specific points
PT   so that resulting peptides have specific N-terminal amino acid
PT   sequences -
XX
PS   Claim 6; Page 1; 16pp; Japanese.
XX
CC   The present sequence is provided in a specification relating to a method
CC   for manufacturing peptides from proteins. The proteins are degraded using
CC   a novel protease enzyme which cuts the proteins at between 1 and 3
CC   points. The resulting peptides have an N-terminal end having a specific
CC   amino acid sequence. The method may be used in the manufacture of
CC   jelly-like foodstuffs, gelatin capsules and drugs. It is also used for
CC   coating the surface of a material useful as an artificial living tissue.
CC   The gelatin peptides prepared using the novel protease enzyme have
CC   reduced allergenicity and antigenicity and dissolve readily in cold
CC   water. The jelly-like gels prepared using the gelatin peptides fuse well
CC   with other liquids even at room temperature.
XX
SQ   Sequence   8 AA;

  Query Match             65.6%;  Score 42;  DB 22;  Length 8;
  Best Local Similarity   100.0%;  Pred. No. 7.8e+05;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       2 PQGIAGQR 9
           ||||||||
Db       1 PQGIAGQR 8


RESULT 9
AAO14105
ID   AAO14105 standard; peptide; 8 AA.
XX
AC   AAO14105;
XX
DT   22-APR-2002  (first entry)
XX
DE   Dinitrophenol-tagged substrate peptide.
XX
KW   Dinitrophenol-tagged substrate; ovotransferrin; skin care;
KW   cosmetic product; collagenase; gelatinase; collagen; elastin; elastase.
XX
OS   Synthetic.
XX
FH   Key             Location/Qualifiers
```

```
FT   Modified-site   1
FT                   /note= "N-terminal dinitrophenol tag"
FT   Misc-difference 8
FT                   /note= "D-form residue"
XX
PN   WO200187292-A2.
XX
PD   22-NOV-2001.
XX
PF   14-MAY-2001; 2001WO-CA00687.
XX
PR   15-MAY-2000; 2000US-204352P.
XX
PA   (CAIN-) CANADIAN INOVATECH INC.
XX
PI   Smith SR,  Charter EA;
XX
DR   WPI; 2002-062327/08.
XX
PT   Use of ovotransferrin for inhibiting degradation of elastin or
PT   collagen, and cosmetic compositions comprising ovotransferrin, useful
PT   for skin care  -
XX
PS   Example 3; Page 23; 34pp; English.
XX
CC   The invention comprises the use of ovotransferrin in cosmetic skin care
CC   compositions to inhibit elastase and collagenase (also known as
CC   gelatinase). Collagen and elastin are both main components of skin and
CC   are commonly used in topically-applied cosmetic products. Collagen and
CC   elastin are degraded by elastase and collagenase which are present in
CC   both humans and microorganisms. It has been found that the addition of
CC   ovotransferrin to a composition containing collagen and elastin will
CC   substantially inhibit the degradation of collagen and elastin by
CC   collagenase and elastase. The compositions of the invention are useful as
CC   skin care compositions. The present sequence is a dinitrophenol-tagged
CC   substrate peptide used in an example of the  invention.
XX
SQ   Sequence   8 AA;

  Query Match             65.6%;  Score 42;  DB 23;  Length 8;
  Best Local Similarity   100.0%;  Pred. No. 7.8e+05;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      2 PQGIAGQR 9
          ||||||||
Db      1 PQGIAGQR 8


RESULT 10
AAR38477
ID   AAR38477 standard; peptide; 9 AA.
XX
AC   AAR38477;
XX
DT   02-DEC-1993  (first entry)
XX
DE   Sequence of synthetic fragment of peptide P-15 which spans
DE   approx. residues 766-780 of the alpha-1(I) chain of collagen.
XX
KW   Synthetic peptide; alpha-1(I) chain; collagen; binding; P-15.
XX
OS   Synthetic.
XX
PN   WO9311781-A.
XX
PD   24-JUN-1993.
XX
PF   03-DEC-1992;   92WO-US10420.
XX
PR   09-DEC-1991;   91US-0804782.
XX
PA   (REGC ) UNIV CALIFORNIA.
XX
PI   Bhatnagar RS;
XX
DR   WPI; 1993-213814/26.
XX
PT   Synthetic peptide mimicking collagen binding to cells - used in
PT   composite with bio-material matrix for soft and hard tissue
PT   repair or reconstruction
XX
PS   Claim 1; Table 1, page 9; 26pp; English.
XX
CC   The P-15 peptide spans approx. residues 766-780 of the alpha-1(I)
CC   chain of collagen. The P-15 region does not occur as a natural
CC   fragment of collagen nor is it a product of natural enzymatic
CC   cleavage. The P-15 region represent half of one turn of the collagen
CC   triple helix. The sequence contd. in P-15 can acquire a conformation
CC   dramatically different from the triple helical conformation
CC   generally observed in the rest of the collagen molecule. AAR38477-82
CC   is a family of synthetic peptide fragments of P-15. They mimic the
CC   cell binding domain of collagen. The domain includes a core
CC   sequence that, at physiologic conditions, is folded in a beta-bend
CC   formed at the 773-774 Ile-Ala. The relative cell-binding activity
CC   of this peptide is 100.
XX
SQ   Sequence   9 AA;

  Query Match             65.6%;  Score 42;  DB 14;  Length 9;
  Best Local Similarity   100.0%;  Pred. No. 7.8e+05;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      2 PQGIAGQR 9
          ||||||||
Db      2 PQGIAGQR 9


RESULT 11
AAW27492
ID   AAW27492 standard; peptide; 9 AA.
XX
AC   AAW27492;
XX
DT   20-APR-1998  (first entry)
XX
DE   Cell binding peptide #2 derived from collagen.
XX
KW   Bioreactor; packing material; cell culture; collagen alpha1(I) chain;
KW   cell binding peptide; matrix.
XX
OS   Synthetic.
OS   Mammalia.
XX
PN   US5674848-A.
XX
PD   07-OCT-1997.
XX
PF   03-AUG-1994;   94US-0285570.
XX
PR   14-AUG-1989;   89US-0393621.
PR   09-DEC-1991;   91US-0804782.
XX
PA   (REGC ) UNIV CALIFORNIA.
XX
PI   Bhatnagar RS;
XX
DR   WPI; 1997-502373/46.
XX
PT   Bioreactor packing material for cell culture - comprising matrix
PT   coated with cell binding peptide
XX
PS   Claim 1; Col 18; 13pp; English.
XX
CC   This is a specifically claimed peptide, derived from a region of the
CC   alpha1(I) chain of collagen which is sometimes referred to as "P-15". It
CC   can be used as a cell binding peptide in a new packing material, which
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CC   is useful for cell culture in a bioreactor. The material comprises a
CC   matrix formed of a biomaterial, i.e. a material that is biologically
CC   compatible for in vivo applications and for cell culture in vitro, and
CC   the cell binding peptide. A bioreactor containing the packing material
CC   can be used to culture cells, e.g. mammalian cells for the production of
CC   monoclonal antibodies. The peptides are more effective than collagen in
CC   promoting cell attachment.
XX
SQ   Sequence   9 AA;

  Query Match             65.6%;  Score 42;  DB 18;  Length 9;
  Best Local Similarity   100.0%;  Pred. No. 7.8e+05;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      2 PQGIAGQR 9
          ||||||||
Db      2 PQGIAGQR 9


RESULT 12
AAW18826
ID   AAW18826 standard; peptide; 9 AA.
XX
AC   AAW18826;
XX
DT   05-JAN-1998  (first entry)
XX
DE   Collagen binding peptide mimic 2.
XX
KW   implant; biomaterial matrix; enhanced cell binding; collagen;
KW   beta-bend; fold; substrate; reconstructive surgery; bone; ligament;
KW   repair; tooth.
XX
OS   Synthetic.
XX
PN   US5635482-A.
XX
PD   03-JUN-1997.
XX
PF   14-AUG-1989;   89US-0393621.
XX
PR   22-JUL-1994;   94US-0278878.
PR   14-AUG-1989;   89US-0393621.
PR   09-DEC-1991;   91US-0804782.
XX
PA   (REGC ) UNIV CALIFORNIA.
XX
PI   Bhatnagar RS;
XX
DR   WPI; 1997-309859/28.
XX
PT   Implant bearing cell-binding collagen-mimetic peptide - for
PT   promoting cell attachment
XX
PS   Claim 1; Column 18; 12pp; English.
XX
CC   New implants comprise a biomaterial matrix and a peptide carried by the
CC   matrix, where the peptide has enhanced cell binding with respect to
CC   collagen and has a domain that mimics collagen binding to cells, the
CC   domain including at least -Ile-Ala- folded in a beta-bend at
CC   physiological conditions. The peptide is one of AAW18825-34 or one of 3
CC   tripeptides (NAc-Ile-Ala-Ala; Ile-Ala-beta Ala; and NAc-Ile-Ala-N-Me).
CC   The implant is used as a substrate for growing cells, e.g. for use in
CC   reconstructive surgery, e.g. for bone or ligament repair or as tooth
CC   implants. The peptide promotes cell attachment to the matrix and also
CC   cell migration into the matrix when the matrix is porous.
XX
SQ   Sequence   9 AA;

  Query Match             65.6%;  Score 42;  DB 18;  Length 9;
  Best Local Similarity   100.0%;  Pred. No. 7.8e+05;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      2 PQGIAGQR 9
          ||||||||
Db      2 PQGIAGQR 9


RESULT 13
AAY29992
ID   AAY29992 standard; peptide; 9 AA.
XX
AC   AAY29992;
XX
DT   02-DEC-1999  (first entry)
XX
DE   Collagen cell binding domain mimotope #2.
XX
KW   Collagen; cell binding domain; biomaterial; soft tissue repair;
KW   hard tissue repair; reconstruction; cell surface receptor;
KW   fibronectin; beta-bend; cartilage; tendon; ligament; bone.
XX
OS   Synthetic.
XX
PN   US5958428-A.
XX
PD   28-SEP-1999.
XX
PF   20-MAY-1997;   97US-0859610.
XX
PR   22-JUL-1994;   94US-0278878.
PR   14-AUG-1989;   89US-0393621.
PR   09-DEC-1991;   91US-0804782.
XX
PA   (REGC ) UNIV CALIFORNIA.
XX
PI   Bhatnagar RS;
XX
DR   WPI; 1999-561009/47.
XX
PT   Synthetic peptide additives with enhanced collagen binding affinities
PT   useful for the production of apparatus for soft tissue, cartilage and
PT   bone repair -
XX
PS   Claim 3; Column 25; 16pp; English.
XX
CC   The present invention describes synthetic peptide additives (SPAs) with
CC   enhanced collagen binding affinities. AAY29991 to AAY30000 represent
CC   specifically claimed examples of the SPA's.The additives comprise
CC   domains that mimic the binding sites of collagen to cells (but with
CC   higher affinity) and promote cell attachment when the additives are
CC   carried on repair or reconstructive apparatus. The SPA may be used in
CC   the construction of apparatus for soft tissue, cartilage, tendon,
CC   ligament and bone repair. The SPA mimics and enhances the binding of
CC   cells to the tissue repair apparatus.
XX
SQ   Sequence   9 AA;

  Query Match             65.6%;  Score 42;  DB 20;  Length 9;
  Best Local Similarity   100.0%;  Pred. No. 7.8e+05;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      2 PQGIAGQR 9
          ||||||||
Db      2 PQGIAGQR 9


RESULT 14
AAG67403
ID   AAG67403 standard; peptide; 9 AA.
XX
AC   AAG67403;
XX
DT   13-NOV-2001  (first entry)
XX
DE   Synthetic peptide mimicking cell binding domain of collagen.
```

XX
KW Cell binding; collagen; cell migration; collagen receptor; tissue repair;
KW metalloproteinase; prolyl hydroxylase; tissue reconstruction; arthritis;
KW bone repair; tooth implant; ligament repair; scar tissue; osteoporosis;
KW bone disease; cartilage repair; joint disease; tendon repair.
XX
OS Synthetic.
XX
PN US6268348-B1.
XX
PD 31-JUL-2001.
XX
PF 08-JUN-1999; 99US-0328347.
XX
PR 22-JUL-1994; 94US-0278878.
PR 20-MAY-1997; 97US-0859610.
PR 14-AUG-1989; 89US-0393621.
PR 09-DEC-1991; 91US-0804782.
XX
PA (REGC) UNIV CALIFORNIA.
XX
PI Bhatnagar RS;
XX
DR WPI; 2001-540321/60.
XX
PT New collagen binding synthetic peptide useful for soft and hard tissue
PT repair e.g. bone repairs comprises a family of amino acid sequence -
XX
PS Claim 2; Column 25; 16pp; English.
XX
CC The present sequence represents a synthetic peptide, which mimics the
CC cell binding domain of collagen. The cell binding ability of the
CC peptide is enhanced with respect to collagen. The peptide promotes cell
CC migration into porous lattices; binds to collagen receptors; induces
CC metalloproteinases; can down regulate prolyl hydroxylase and collagen;
CC inhibits cell binding to collagen or inhibits cell migration in vitro.
CC The peptide is used for soft and hard tissue repair or reconstruction,
CC e.g. bone repair, tooth implants and ligament repair; for in vitro uses;
CC as an inhibitor of collagen synthesis to block formation of scar tissue
CC and thus promotes scarless healing; as bone filling/fusion for
CC osteoporosis and other bone diseases, cartilage repair for arthritis and
CC other joint disease and tendon repair; for soft tissue repair e.g. nerve,
CC organ, skin, vascular, muscle and ophthalmic applications.
XX
SQ Sequence 9 AA;

Query Match 65.6%; Score 42; DB 22; Length 9;
Best Local Similarity 100.0%; Pred. No. 7.8e+05;
Matches 8; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 2 PQGIAGQR 9
||||||||
Db 2 PQGIAGQR 9

RESULT 15
AAR11114
ID AAR11114 standard; peptide; 15 AA.
XX
AC AAR11114;
XX
DT 17-MAY-1991 (first entry)
XX
DE Collagen peptide analogue.
XX
KW Collagen alpha-1 chain; cell adhesion; vertebrates.
XX
OS synthetic.
XX
PN WO9102537-A.
XX
PD 07-MAR-1991.
XX
PF 13-AUG-1990; 90WO-US04538.
XX
PR 14-AUG-1989; 89US-0393621.
XX
PA (REGC) UNIV OF CALIFORNIA.
XX
PI Bhatnagar RS;
XX
DR WPI; 1991-087110/12.
XX
PT Synthetic peptide(s) analogous to collagen - promote cell adhesion
XX
PS Claim 1; page 16; 20pp; English.
XX
CC This peptide corresps. to a region of the alpha-1 chain of collagen.
CC It is useful in a compsn. for promoting vertebrate cell (esp.
CC fibroblast) adhesion to a substrate. It is free from natural
CC folding, glycosylation, cross-linking, hydroxylation and association
CC with other peptide chains.
XX
SQ Sequence 15 AA;

Query Match 65.6%; Score 42; DB 12; Length 15;
Best Local Similarity 100.0%; Pred. No. 0.94;
Matches 8; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 2 PQGIAGQR 9
||||||||
Db 5 PQGIAGQR 12

RESULT 16
AAR38476
ID AAR38476 standard; peptide; 15 AA.
XX
AC AAR38476;
XX
DT 02-DEC-1993 (first entry)
XX
DE Sequence of peptide P-15 which spans approx. residues 766-780 of the
DE alpha-1(I) chain of collagen.
XX
KW Synthetic peptide; alpha-1(I) chain; collagen; binding; P-15.
XX
OS Synthetic.
XX
PN WO9311781-A.
XX
PD 24-JUN-1993.
XX
PF 03-DEC-1992; 92WO-US10420.
XX
PR 09-DEC-1991; 91US-0804782.
XX
PA (REGC) UNIV CALIFORNIA.
XX
PI Bhatnagar RS;
XX
DR WPI; 1993-213814/26.
XX
PT Synthetic peptide mimicking collagen binding to cells - used in
PT composite with bio-material matrix for soft and hard tissue
PT repair or reconstruction
XX
PS Disclosure; Table 1, page 9; 26pp; English.
XX
CC The P-15 peptide spans approx. residues 766-780 of the alpha-1(I)
CC chain of collagen. The P-15 region does not occur as a natural
CC fragment of collagen nor is it a product of natural enzymatic
CC cleavage. The P-15 region represent half of one turn of the collagen
CC triple helix. The sequence contd. in P-15 can acquire a conformation
CC dramatically different from the triple helical conformation
CC generally observed in the rest of the collagen molecule. AAR38477-82

CC is a family of synthetic peptide fragments of P-15. They mimic the
CC cellb binding domain of collagen. The domain includes a core
CC sequence that, at physiologic conditions, is folded in a beta-bend
CC formed at the Ile-Ala.
XX
SQ Sequence 15 AA;

Query Match 65.6%; Score 42; DB 14; Length 15;
Best Local Similarity 100.0%; Pred. No. 0.94;
Matches 8; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 2 PQGIAGQR 9
||||||||
Db 5 PQGIAGQR 12

RESULT 17
AAW27491
ID AAW27491 standard; peptide; 15 AA.
XX
AC AAW27491;
XX
DT 20-APR-1998 (first entry)
XX
DE Cell binding peptide #1 derived from collagen.
XX
KW Bioreactor; packing material; cell culture; collagen alphal(I) chain;
KW cell binding peptide; matrix.
XX
OS Synthetic.
OS Mammalia.
XX
PN US5674848-A.
XX
PD 07-OCT-1997.
XX
PF 03-AUG-1994; 94US-0285570.
XX
PR 14-AUG-1989; 89US-0393621.
PR 09-DEC-1991; 91US-0804782.
XX
PA (REGC) UNIV CALIFORNIA.
XX
PI Bhatnagar RS;
XX
DR WPI; 1997-502373/46.
XX
PT Bioreactor packing material for cell culture - comprising matrix
PT coated with cell binding peptide
XX
PS Claim 1; Col 18; 13pp; English.
XX
CC The present peptide sequence corresponds to a region of the alphal(I)
CC chain of collagen which is sometimes referred to as "P-15". It can be
CC used as a cell binding peptide in a new packing material, which is useful
CC for cell culture in a bioreactor. The material comprises a matrix formed
CC of a biomaterial, i.e. a material that is biologically compatible for in
CC vivo applications and for cell culture in vitro, and the cell binding
CC peptide. A bioreactor containing the packing material can be used to
CC culture cells, e.g. mammalian cells for the production of monoclonal
CC antibodies. The peptides are more effective than collagen in promoting
CC cell attachment.
XX
SQ Sequence 15 AA;

Query Match 65.6%; Score 42; DB 18; Length 15;
Best Local Similarity 100.0%; Pred. No. 0.94;
Matches 8; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 2 PQGIAGQR 9
||||||||
Db 5 PQGIAGQR 12

RESULT 18
AAW18825
ID AAW18825 standard; peptide; 15 AA.
XX
AC AAW18825;
XX
DT 05-JAN-1998 (first entry)
XX
DE Collagen binding peptide mimic 1.
XX
KW implant; biomaterial matrix; enhanced cell binding; collagen;
KW beta-bend; fold; substrate; reconstructive surgery; bone; ligament;
KW repair; tooth.
XX
OS Synthetic.
XX
PN US5635482-A.
XX
PD 03-JUN-1997.
XX
PF 14-AUG-1989; 89US-0393621.
XX
PR 22-JUL-1994; 94US-0278878.
PR 14-AUG-1989; 89US-0393621.
PR 09-DEC-1991; 91US-0804782.
XX
PA (REGC) UNIV CALIFORNIA.
XX
PI Bhatnagar RS;
XX
DR WPI; 1997-309859/28.
XX
PT Implant bearing cell-binding collagen-mimetic peptide - for
PT promoting cell attachment
XX
PS Claim 1; Column 18; 12pp; English.
XX
CC New implants comprise a biomaterial matrix and a peptide carried by the
CC matrix, where the peptide has enhanced cell binding with respect to
CC collagen and has a domain that mimics collagen binding to cells, the
CC domain including at least -Ile-Ala- folded in a beta-bend at
CC physiological conditions. The peptide is one of AAW18825-34 or one of 3
CC tripeptides (NAc-Ile-Ala-Ala; Ile-Ala-beta Ala; and NAc-Ile-Ala-N-Me).
CC The implant is used as a substrate for growing cells, e.g. for use in
CC reconstructive surgery, e.g. for bone or ligament repair or as tooth
CC implants. The peptide promotes cell attachment to the matrix and also
CC cell migration into the matrix when the matrix is porous.
XX
SQ Sequence 15 AA;

Query Match 65.6%; Score 42; DB 18; Length 15;
Best Local Similarity 100.0%; Pred. No. 0.94;
Matches 8; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 2 PQGIAGQR 9
||||||||
Db 5 PQGIAGQR 12

RESULT 19
AAY29991
ID AAY29991 standard; peptide; 15 AA.
XX
AC AAY29991;
XX
DT 02-DEC-1999 (first entry)
XX
DE Collagen cell binding domain mimotope #1.
XX
KW Collagen; cell binding domain; biomaterial; soft tissue repair;
KW hard tissue repair; reconstruction; cell surface receptor;
KW fibronectin; beta-bend; cartilage; tendon; ligament; bone.

XX
OS Synthetic.
XX
PN US5958428-A.
XX
PD 28-SEP-1999.
XX
PF 20-MAY-1997; 97US-0859610.
XX
PR 22-JUL-1994; 94US-0278878.
PR 14-AUG-1989; 89US-0393621.
PR 09-DEC-1991; 91US-0804782.
XX
PA (REGC) UNIV CALIFORNIA.
XX
PI Bhatnagar RS;
XX
DR WPI; 1999-561009/47.
XX
PT Synthetic peptide additives with enhanced collagen binding affinities
PT useful for the production of apparatus for soft tissue, cartilage and
PT bone repair -
XX
PS Claim 3; Column 25; 16pp; English.
XX
CC The present invention describes synthetic peptide additives (SPAs) with
CC enhanced collagen binding affinities. AAY29991 to AAY30000 represent
CC specifically claimed examples of the SPA's.The additives comprise
CC domains that mimic the binding sites of collagen to cells (but with
CC higher affinity) and promote cell attachment when the additives are
CC carried on repair or reconstructive apparatus. The SPA may be used in
CC the construction of apparatus for soft tissue, cartilage, tendon,
CC ligament and bone repair. The SPA mimics and enhances the binding of
CC cells to the tissue repair apparatus.
XX
SQ Sequence 15 AA;

Query Match 65.6%; Score 42; DB 20; Length 15;
Best Local Similarity 100.0%; Pred. No. 0.94;
Matches 8; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 2 PQGIAGQR 9
||||||||
Db 5 PQGIAGQR 12

RESULT 20
AAY29587
ID AAY29587 standard; peptide; 15 AA.
XX
AC AAY29587;
XX
DT 18-OCT-1999 (first entry)
XX
DE Collagen fibronectin binding region oligopeptide.
XX
KW Collagen; fibronectin binding region; tissue regeneration; implant;
KW internal wound site; biodegradable microparticle.
XX
OS Unidentified.
XX
PN WO9933447-A2.
XX
PD 08-JUL-1999.
XX
PF 24-DEC-1998; 98WO-US27596.
XX
PR 30-DEC-1997; 97US-0000638.
XX
PA (MASI) MASSACHUSETTS INST TECHNOLOGY.
XX
PI Yannas IV;
XX
DR WPI; 1999-493795/41.
XX
PT Biodegradable microparticles for tissue regeneration at an internal
PT wound site
XX
PS Disclosure; Page 8; 25pp; English.
XX
CC The present invention describes a porous biodegradable microparticle (I)
CC for tissue regeneration at an internal wound site in a subject. The
CC pores of (I) have a diameter 1-300 mu m; (I) has a minimum water content
CC of at least about 80%, a minimum specific surface area of at least about
CC 103 mm2 per cm3 and a diameter 10-1000 micro m; between about 20-80% by
CC weight of (I) is biodegraded at the wound site during the time period
CC required for a wound of about the same severity, size and tissue type to
CC complete about one half of the contraction which normally takes place in
CC the absence of (I); and (I) comprises: (i) a three dimensional network
CC of polymers which is substantially insoluble under physiological
CC conditions; and (ii) one or more specific cell-binding fragments.
CC Methods using (I) may be used to treat internal injuries caused to
CC internal organs by disease or trauma, and to inhibit wound contraction
CC and scar formation. The methods work by preventing contractile cells in
CC the vicinity of a wound site (accidentally or surgically induced) on an
CC internal organ from inducing contraction at the lesion site. The tissue
CC regeneration methods greatly improve the clinical outcomes of patients
CC with internal organ and tissue injuries. The present sequence represents
CC a collagen fibronectin binding region oligopeptide which is used in as
CC part of an example of a specific cell binding fraction which is included
CC in a 3-dimensional network of the regeneration template from the present
CC invention.
XX
SQ Sequence 15 AA;

Query Match 65.6%; Score 42; DB 20; Length 15;
Best Local Similarity 100.0%; Pred. No. 0.94;
Matches 8; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 2 PQGIAGQR 9
||||||||
Db 5 PQGIAGQR 12

RESULT 21
AAG67402
ID AAG67402 standard; peptide; 15 AA.
XX
AC AAG67402;
XX
DT 13-NOV-2001 (first entry)
XX
DE Synthetic peptide mimicking cell binding domain of collagen.
XX
KW Cell binding; collagen; cell migration; collagen receptor; tissue repair;
KW metalloproteinase; prolyl hydroxylase; tissue reconstruction; arthritis;
KW bone repair; tooth implant; ligament repair; scar tissue; osteoporosis;
KW bone disease; cartilage repair; joint disease; tendon repair.
XX
OS Synthetic.
XX
PN US6268348-B1.
XX
PD 31-JUL-2001.
XX
PF 08-JUN-1999; 99US-0328347.
XX
PR 22-JUL-1994; 94US-0278878.
PR 20-MAY-1997; 97US-0859610.
PR 14-AUG-1989; 89US-0393621.
PR 09-DEC-1991; 91US-0804782.
XX
PA (REGC) UNIV CALIFORNIA.
XX
PI Bhatnagar RS;
XX

DR WPI; 2001-540321/60.
XX
PT New collagen binding synthetic peptide useful for soft and hard tissue
PT repair e.g. bone repairs comprises a family of amino acid sequence -
XX
PS Claim 1; Column 25; 16pp; English.
XX
CC The present sequence represents a synthetic peptide, which mimics the
CC cell binding domain of collagen. The cell binding ability of the
CC peptide is enhanced with respect to collagen. The peptide promotes cell
CC migration into porous lattices; binds to collagen receptors; induces
CC metalloproteinases; can down regulate prolyl hydroxylase and collagen;
CC inhibits cell binding to collagen or inhibits cell migration in vitro.
CC The peptide is used for soft and hard tissue repair or reconstruction,
CC e.g. bone repair, tooth implants and ligament repair; for in vitro uses;
CC as an inhibitor of collagen synthesis to block formation of scar tissue
CC and thus promotes scarless healing; as bone filling/fusion for
CC osteoporosis and other bone diseases, cartilage repair for arthritis and
CC other joint disease and tendon repair; for soft tissue repair e.g. nerve,
CC organ, skin, vascular, muscle and ophthalmic applications.
XX
SQ Sequence 15 AA;

Query Match 65.6%; Score 42; DB 22; Length 15;
Best Local Similarity 100.0%; Pred. No. 0.94;
Matches 8; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 2 PQGIAGQR 9
||||||||
Db 5 PQGIAGQR 12

RESULT 22
ABB10111
ID ABB10111 standard; peptide; 15 AA.
XX
AC ABB10111;
XX
DT 12-JUL-2002 (first entry)
XX
DE Collagen cell binding domain mimic peptide P-15.
XX
KW Collagen; bone; repair; bone graft; tissue engineering; fibroblast;
KW radiation therapy; bone damage.
XX
OS Synthetic.
XX
PN WO200182773-A2.
XX
PD 08-NOV-2001.
XX
PF 29-MAR-2001; 2001WO-US10404.
XX
PR 28-APR-2000; 2000US-0561554.
XX
PA (REGC) UNIV CALIFORNIA.
XX
PI Bhatnagar RS, Qian JJ;
XX
DR WPI; 2002-034479/04.
XX
PT Preparation of bone repair apparatus comprises seeding at least some of
PT cultured tissue cells on biologically compatible structure having
PT collagen mimic and incubating seeded cells under cell growth conditions
PT -
XX
PS Claim 7; Page 6; 23pp; English.
XX
CC The invention relates to a bone repair apparatus that is prepared by
CC growing harvested fibroblasts under cell growth conditions to form
CC cultured tissue cells, seeding at least some of the cultured tissue
CC cells on a biologically compatible structure having a collagen mimic, and
CC incubating the seeded cells under cell growth conditions, where the
CC seeded cells differentiate into an osteogenic phenotype. Methods of the
CC invention are useful for preparing bone repair apparatus for use as a
CC bone graft. The fibroblast cells from the recipient can be easily
CC harvested with minimal invasion and trauma to the patient. By contrast to
CC other methods, the fibroblast is plentiful and easily obtained with
CC minimal trauma and the inventive method is able to obtain living bone
CC grafts. The easily harvested fibroblasts are converted to living bone
CC -like cells and they, together with the biologically compatible
CC structure, yield a tissue engineered bone graft. This can integrate with
CC host bone when implanted in the patient, and repopulates host sites
CC lacking viable cells because of disease or radiation therapy. The current
CC sequence represents a collagen cell binding domain mimic peptide P-15.
CC This 15 amino acid peptide has the same sequence as a particular, small
CC region in the alphal(I) chain of collagen.
XX
SQ Sequence 15 AA;

Query Match 65.6%; Score 42; DB 23; Length 15;
Best Local Similarity 100.0%; Pred. No. 0.94;
Matches 8; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 2 PQGIAGQR 9
||||||||
Db 5 PQGIAGQR 12

RESULT 23
AAR92859
ID AAR92859 standard; peptide; 16 AA.
XX
AC AAR92859;
XX
DT 03-OCT-1996 (first entry)
XX
DE Collagen fragment P-15 as positive control for cell adhesion.
XX
KW Intercellular adhesion; stimulation; inhibition; skin graft;
KW synthetic blood vessel; coating; endothelial cell; epidermal cell;
KW chemotactic attractor; wound healing; organ transplantation;
KW thrombosis; arteriosclerosis; cancer metastases.
XX
OS Synthetic.
XX
FH Key Location/Qualifiers
FT Modified-site 16
FT /note= "C-terminal Cys residue for attaching
FT peptide to a carrier protein, e.g. BSA"
XX
PN DE4430601-A1.
XX
PD 29-FEB-1996.
XX
PF 22-AUG-1994; 94DE-4430601.
XX
PR 22-AUG-1994; 94DE-4430601.
XX
PA (BEIE) BEIERSDORF AG.
XX
PI Doerschner A, Eichner W, Kock K, Mielke H;
XX
DR WPI; 1996-130242/14.
XX
PT Peptide(s) that stimulate or inhibit cell to cell adhesion - used
PT e.g. to coat synthetic blood vessels with endothelial cells, to
PT prepare, or increase growth of skin grafts, to prevent thrombosis
PT etc.
XX
PS Example 1; Page 7; 18pp; German.
XX
CC Peptides contg. the highly generic sequence AA5-AA4-AA3-AA2-AA1-(AAX)n
CC where AA5 is Glu, Ser, Asp or Asn; AA4 is Leu or Ser, AA3 is Leu, Ile,
CC Phe or Gly; AA2 is Asp, Leu, Asn or Ser; AA1 is Gly, Pro or Asp; AAX
CC is any amino acid and n = 0 or 1 are claimed; AA5 or AA5-AA4 may be

CC absent. When two or more such peptides are attached to a carrier, the
CC product can be used for stimulating adhesion of eukaryotic cells in
CC vitro. Particular applications include coating synthetic blood vessels
CC with endothelial cells, preparing skin grafts using epithelial cells
CC or stimulating wound healing. When a single peptide is used it may
CC inhibit intercellular adhesion, making it useful for preventing
CC thrombosis or arteriosclerosis or to suppress cancer metastases. The
CC peptides can also be used as chemotactic attractors and for detecting/
CC quantifying cell-cell adhesion in vitro.
CC The present sequence is a fragment of the alpha-1 chain of collagen
CC which was used as a positive control in a cell adhesion assay on the
CC novel peptides.
XX
SQ Sequence 16 AA;

Query Match 65.6%; Score 42; DB 17; Length 16;
Best Local Similarity 100.0%; Pred. No. 1;
Matches 8; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 2 PQGIAGQR 9
||||||||
Db 5 PQGIAGQR 12

RESULT 24
AAY76868
ID AAY76868 standard; peptide; 16 AA.
XX
AC AAY76868;
XX
DT 12-MAY-2000 (first entry)
XX
DE Collagen receptor agonist.
XX
KW Transforming growth factor-beta; TGF-beta; mimic; cancer; therapy;
KW chemotherapy; radiation therapy; arteriosclerosis; implant integration;
KW wound healing promoter; regeneration; bone repair; rheumatoid arthritis;
KW uveitis; splanchnic artery occlusion reperfusion injury;
KW collagen receptor agonist.
XX
OS Synthetic.
XX
PN WO200002916-A2.
XX
PD 20-JAN-2000.
XX
PF 08-JUL-1999; 99WO-US15432.
XX
PR 10-JUL-1998; 98US-0113696.
XX
PA (REGC) UNIV CALIFORNIA.
XX
PI Bhatnagar RS, Qian JJ, Gough C;
XX
DR WPI; 2000-171133/15.
XX
PT New therapeutic composition comprising TGF-beta mimic, used in cancer
PT therapy -
XX
PS Claim 14; Page 28; 36pp; English.
XX
CC This sequence represents a collagen receptor agonist that can be used in
CC the pharmaceutical composition of the invention. The composition
CC comprises a transforming growth factor-beta (TGF-beta) mimic peptide and
CC a physiologically acceptable carrier. The compositions can be used in
CC cancer therapy, particularly as adjuncts to chemotherapy or radiation
CC therapy. They can also be used in treating arteriosclerosis, since the
CC plaques formed within the lumen of blood vessels have been shown to have
CC angiogenic stimulatory activity. The peptides can also by used: in
CC surgery as agents which promote wound healing and regeneration; in
CC orthopaedics in promoting bone repair and implant integration; in
CC dentistry in the repair of bony defects and in implant integration; in
CC treatment of rheumatoid arthritis; in ophthalmology for the treatment of
CC uveitis; as a protective agent for splanchnic artery occlusion
CC reperfusion injury; and as reagents for research in the biology of growth
CC factors.
XX
SQ Sequence 16 AA;

Query Match 65.6%; Score 42; DB 21; Length 16;
Best Local Similarity 100.0%; Pred. No. 1;
Matches 8; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 2 PQGIAGQR 9
||||||||
Db 6 PQGIAGQR 13

RESULT 25
AAB35632
ID AAB35632 standard; Peptide; 19 AA.
XX
AC AAB35632;
XX
DT 14-FEB-2001 (first entry)
XX
DE Collagenase cleavage site #3.
XX
KW Type II collagen; arthritis; joint; ds.
XX
OS Homo sapiens.
XX
PN US6132976-A.
XX
PD 17-OCT-2000.
XX
PF 22-JAN-1998; 98US-0010999.
XX
PR 04-DEC-1992; 92US-0984123.
PR 17-JUL-1995; 95US-0448501.
XX
PA (SHRI-) SHRINERS HOSPITALS FOR CHILDREN.
XX
PI Billinghurst RC, Poole AR, Hollander AP;
XX
DR WPI; 2001-006136/01.
XX
PT Detecting cartilage degradation useful for early detection of arthritis
PT or joint damage by contacting the biological sample with an antibody
PT that binds to an epitope of unwound type II collagen chains but not to
PT a native helical collagen -
XX
PS Disclosure; Fig 15; 58pp; English.
XX
CC The present invention relates to detecting cartilage degradation in a
CC biological sample by identifying the presence of unwound type II
CC collagen in the sample. The method involves contacting the sample with
CC a monoclonal antibody which only binds an epitope on unwound type II
CC collagen chains. The invention is useful for the early detection of
CC arthritis and joint damage and for monitoring disease related to
CC collagen.
XX
SQ Sequence 19 AA;

Query Match 65.6%; Score 42; DB 22; Length 19;
Best Local Similarity 100.0%; Pred. No. 1.2;
Matches 8; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 2 PQGIAGQR 9
||||||||
Db 8 PQGIAGQR 15

RESULT 26
AAY07306
ID AAY07306 standard; peptide; 25 AA.

XX
AC AAY07306;
XX
DT 06-JUL-1999 (first entry)
XX
DE Collagen assembly inhibitor peptide F6.
XX
KW Human; collagen; assembly; inhibitor.
XX
OS Synthetic.
OS Homo sapiens.
XX
PN WO9912558-A1.
XX
PD 18-MAR-1999.
XX
PF 10-SEP-1998; 98WO-US18838.
XX
PR 10-SEP-1997; 97US-0058353.
XX
PA (UYAL-) UNIV ALLEGHENY HEALTH SCI.
XX
PI Fertala A, Prockop DJ;
XX
DR WPI; 1999-254255/21.
XX
PT Novel inhibitors of collagen assembly
XX
PS Disclosure; Page 23; 57pp; English.
XX
CC This sequence corresponds to residues 761-785 of the alphal chain of
CC human type I collagen. The invention relates to the use of the collagen
CC to isolate type I collagen assembly-inhibiting peptides, e.g. see
CC AAY07304-Y07326.
XX
SQ Sequence 25 AA;

Query Match 65.6%; Score 42; DB 20; Length 25;
Best Local Similarity 100.0%; Pred. No. 1.6;
Matches 8; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 2 PQGIAGQR 9
||||||||
Db 13 PQGIAGQR 20

RESULT 27
AAE02713
ID AAE02713 standard; Protein; 333 AA.
XX
AC AAE02713;
XX
DT 06-AUG-2001 (first entry)
XX
DE Recombinant human gelatin #2.
XX
KW Human; recombinant gelatin; binding agent; stabilising agent; emulsifier;
KW encapsulant; film-forming agent; moisturising agent; thickening agent;
KW gelling agent; colloidal agent; adhesive agent; gel capsule; photography;
KW plasma expander; colloidal volume replacement material; graft coating;
KW medical sponge; medical plug; micro-carrier; edible composition;
KW protein supplement; fat substitute; nutritional supplement; cell culture;
KW edible coating; cosmetic; vaccine; therapy; arthritis; athrosis;
KW cartilage degeneration; joint flexibility; food industry; beverage.
XX
OS Homo sapiens.
XX
PN WO200134646-A2.
XX
PD 17-MAY-2001.
XX
PF 10-NOV-2000; 2000WO-US30791.
XX
PR 12-NOV-1999; 99US-0165114.
PR 15-MAY-2000; 2000US-0204437.
XX
PA (FIBR-) FIBROGEN INC.
XX
PI Chang RC, Kivirikko KI, Neff TB, Olsen DR, Polarek JW;
XX
DR WPI; 2001-329072/34.
XX
PT Gelatin useful for pharmaceuticals, cosmetics and edible foods, is
PT prepared recombinantly -
XX
PS Example 1; Page 132-133; 137pp; English.
XX
CC The patent discloses recombinant human gelatin which is useful
CC in various compositions including binding agents, encapsulants,
CC stabilising agents, film-forming agents, moisturising agents,
CC emulsifiers, thickening agents, gelling agents, colloidal agents,
CC adhesive agents, pharmaceutical compositions, hard gel capsules,
CC soft gel capsules, plasma expander, colloidal volume replacement
CC materials, graft coatings, medical sponges, medical plugs,
CC pharmaceutical stabilisers, micro-carriers, edible compositions,
CC protein supplements, fat substitutes, nutritional supplements,
CC edible coatings, photographic compositions, cosmetic compositions,
CC industrial composition, cell culture compositions and compositions
CC for use in the laboratory. Pharmaceutical compositions comprising
CC recombinant gelatin are used as vaccines. They are also used to
CC treat various joint conditions such as arthritis, athrosis and
CC other conditions related to the degeneration of cartilage and joint
CC flexibility. Recombinant gelatin is also used in food and beverage
CC industries. The present sequence is a recombinant human gelatin.
XX
SQ Sequence 333 AA;

Query Match 65.6%; Score 42; DB 22; Length 333;
Best Local Similarity 100.0%; Pred. No. 20;
Matches 8; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 2 PQGIAGQR 9
||||||||
Db 92 PQGIAGQR 99

RESULT 28
AAB68067
ID AAB68067 standard; Protein; 333 AA.
XX
AC AAB68067;
XX
DT 09-JUL-2001 (first entry)
XX
DE Amino acid sequence of a recombinant human gelatin.
XX
KW Human; gelatin; vaccine; anaphylactic reaction.
XX
OS Homo sapiens.
XX
PN WO200134801-A2.
XX
PD 17-MAY-2001.
XX
PF 10-NOV-2000; 2000WO-US30843.
XX
PR 12-NOV-1999; 99US-0165114.
PR 15-MAY-2000; 2000US-0204437.
XX
PA (FIBR-) FIBROGEN INC.
XX
PI Chang RC, Kivirikko KI, Neff TB, Olsen DR, Polarek JW;
XX
DR WPI; 2001-308784/32.
XX
PT Vaccine formulations (I) comprising recombinant human gelatin, useful

```
PT   for vaccinating against e.g. mumps, measles, rubella, tetanus, rabies
PT   and cholera, the gelatin is non-immunogenic and confers stability at
PT   ambient temperatures -
XX
PS   Claim 11; Page 125-126; 130pp; English.
XX
CC   The present sequence represents a human recombinant gelatin polypeptide.
CC   The recombinant gelatin polypeptide is used to produce vaccine
CC   formulations of the invention. The recombinant human gelatin is
CC   non-immunogenic (therefore reducing anaphylactic reactions) and confers
CC   stability at ambient temperatures. The vaccine formulation comprises a
CC   vaccine formulated for the prevention of a disease selected from vaccinia
CC   virus (small pox), polio virus (Salk and Sabin), mumps, measles, rubella,
CC   diphtheria, tetanus, Varicella-Zoster (chicken pox/shingles), pertussis
CC   (whooping cough), Bacille Calmette-Geurin (BCG, tuberculosis),
CC   haemophillus influenzae meningitis, rabies, cholera, Japanese
CC   encephalitis virus, salmonella typhi, shigella, hepatitis A and B,
CC   adenovirus, yellow fever, foot and mouth disease, herpes simplex virus,
CC   respiratory syncytial virus, rotavirus, Dengue, West Nile virus, turkey
CC   herpes virus (Marek's disease), influenza and/or anthrax.
XX
SQ   Sequence   333 AA;

  Query Match             65.6%;  Score 42;  DB 22;  Length 333;
  Best Local Similarity   100.0%;  Pred. No. 20;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       2 PQGIAGQR 9
           ||||||||
Db      92 PQGIAGQR 99


RESULT 29
AAE02711
ID   AAE02711 standard; Protein; 416 AA.
XX
AC   AAE02711;
XX
DT   06-AUG-2001  (first entry)
XX
DE   Human alpha1 (I) type I collagen helical domain (residues 615-1030).
XX
KW   Human; recombinant gelatin; binding agent; stabilising agent; emulsifier;
KW   encapsulant; film-forming agent; moisturising agent; thickening agent;
KW   gelling agent; colloidal agent; adhesive agent; gel capsule; photography;
KW   plasma expander; colloidal volume replacement material; graft coating;
KW   medical sponge; medical plug; micro-carrier; edible composition;
KW   protein supplement; fat substitute; nutritional supplement; cell culture;
KW   edible coating; cosmetic; vaccine; therapy; arthritis; athrosis;
KW   cartilage degeneration; joint flexibility; food industry; beverage;
KW   alphal (I) type I collagen.
XX
OS   Homo sapiens.
XX
PN   WO200134646-A2.
XX
PD   17-MAY-2001.
XX
PF   10-NOV-2000; 2000WO-US30791.
XX
PR   12-NOV-1999;   99US-0165114.
PR   15-MAY-2000; 2000US-0204437.
XX
PA   (FIBR-) FIBROGEN INC.
XX
PI   Chang RC,  Kivirikko KI,  Neff TB,  Olsen DR,  Polarek JW;
XX
DR   WPI; 2001-329072/34.
XX
PT   Gelatin useful for pharmaceuticals, cosmetics and edible foods, is
PT   prepared recombinantly -
XX
PS   Claim 21; Page 128-130; 137pp; English.
XX
CC   The patent discloses recombinant human gelatin which is useful
CC   in various compositions including binding agents, encapsulants,
CC   stabilising agents, film-forming agents, moisturising agents,
CC   emulsifiers, thickening agents, gelling agents, colloidal agents,
CC   adhesive agents, pharmaceutical compositions, hard gel capsules,
CC   soft gel capsules, plasma expander, colloidal volume replacement
CC   materials, graft coatings, medical sponges, medical plugs,
CC   pharmaceutical stabilisers, micro-carriers, edible compositions,
CC   protein supplements, fat substitutes, nutritional supplements,
CC   edible coatings, photographic compositions, cosmetic compositions,
CC   industrial composition, cell culture compositions and compositions
CC   for use in the laboratory. Pharmaceutical compositions comprising
CC   recombinant gelatin are used as vaccines. They are also used to
CC   treat various joint conditions such as arthritis, athrosis and
CC   other conditions related to the degeneration of cartilage and joint
CC   flexibility. Recombinant gelatin is also used in food and beverage
CC   industries. The present sequence is human alphal (I) type I collagen
CC   helical domain (residues 615-1030). This sequence is a recombinant
CC   gelatin.
XX
SQ   Sequence   416 AA;

  Query Match             65.6%;  Score 42;  DB 22;  Length 416;
  Best Local Similarity   100.0%;  Pred. No. 25;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       2 PQGIAGQR 9
           ||||||||
Db     337 PQGIAGQR 344


RESULT 30
AAB68065
ID   AAB68065 standard; Protein; 416 AA.
XX
AC   AAB68065;
XX
DT   09-JUL-2001  (first entry)
XX
DE   Amino acid sequence of a recombinant human gelatin.
XX
KW   Human; gelatin; vaccine; anaphylactic reaction.
XX
OS   Homo sapiens.
XX
PN   WO200134801-A2.
XX
PD   17-MAY-2001.
XX
PF   10-NOV-2000; 2000WO-US30843.
XX
PR   12-NOV-1999;   99US-0165114.
PR   15-MAY-2000; 2000US-0204437.
XX
PA   (FIBR-) FIBROGEN INC.
XX
PI   Chang RC,  Kivirikko KI,  Neff TB,  Olsen DR,  Polarek JW;
XX
DR   WPI; 2001-308784/32.
XX
PT   Vaccine formulations (I) comprising recombinant human gelatin, useful
PT   for vaccinating against e.g. mumps, measles, rubella, tetanus, rabies
PT   and cholera, the gelatin is non-immunogenic and confers stability at
PT   ambient temperatures -
XX
PS   Claim 11; Page 121-123; 130pp; English.
XX
CC   The present sequence represents a human recombinant gelatin polypeptide.
CC   The recombinant gelatin polypeptide is used to produce vaccine
CC   formulations of the invention. The recombinant human gelatin is
CC   non-immunogenic (therefore reducing anaphylactic reactions) and confers
CC   stability at ambient temperatures. The vaccine formulation comprises a
```

CC vaccine formulated for the prevention of a disease selected from vaccinia
CC virus (small pox), polio virus (Salk and Sabin), mumps, measles, rubella,
CC diphtheria, tetanus, Varicella-Zoster (chicken pox/shingles), pertussis
CC (whooping cough), Bacille Calmette-Geurin (BCG, tuberculosis),
CC haemophillus influenzae meningitis, rabies, cholera, Japanese
CC encephalitis virus, salmonella typhi, shigella, hepatitis A and B,
CC adenovirus, yellow fever, foot and mouth disease, herpes simplex virus,
CC respiratory syncytial virus, rotavirus, Dengue, West Nile virus, turkey
CC herpes virus (Marek's disease), influenza and/or anthrax.
XX
SQ Sequence 416 AA;

Query Match 65.6%; Score 42; DB 22; Length 416;
Best Local Similarity 100.0%; Pred. No. 25;
Matches 8; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 2 PQGIAGQR 9
||||||||
Db 337 PQGIAGQR 344

RESULT 31
AAE02708
ID AAE02708 standard; Protein; 500 AA.
XX
AC AAE02708;
XX
DT 06-AUG-2001 (first entry)
XX
DE Human alpha1 (I) type I collagen helical domain (residues 531-1030).
XX
KW Human; recombinant gelatin; binding agent; stabilising agent; emulsifier;
KW encapsulant; film-forming agent; moisturising agent; thickening agent;
KW gelling agent; colloidal agent; adhesive agent; gel capsule; photography;
KW plasma expander; colloidal volume replacement material; graft coating;
KW medical sponge; medical plug; micro-carrier; edible composition;
KW protein supplement; fat substitute; nutritional supplement; cell culture;
KW edible coating; cosmetic; vaccine; therapy; arthritis; athrosis;
KW cartilage degeneration; joint flexibility; food industry; beverage;
KW alpha1 (I) type I collagen.
XX
OS Homo sapiens.
XX
PN WO200134646-A2.
XX
PD 17-MAY-2001.
XX
PF 10-NOV-2000; 2000WO-US30791.
XX
PR 12-NOV-1999; 99US-0165114.
PR 15-MAY-2000; 2000US-0204437.
XX
PA (FIBR-) FIBROGEN INC.
XX
PI Chang RC, Kivirikko KI, Neff TB, Olsen DR, Polarek JW;
XX
DR WPI; 2001-329072/34.
XX
PT Gelatin useful for pharmaceuticals, cosmetics and edible foods, is
PT prepared recombinantly -
XX
PS Claim 21; Page 125-127; 137pp; English.
XX
CC The patent discloses recombinant human gelatin which is useful
CC in various compositions including binding agents, encapsulants,
CC stabilising agents, film-forming agents, moisturising agents,
CC emulsifiers, thickening agents, gelling agents, colloidal agents,
CC adhesive agents, pharmaceutical compositions, hard gel capsules,
CC soft gel capsules, plasma expander, colloidal volume replacement
CC materials, graft coatings, medical sponges, medical plugs,
CC pharmaceutical stabilisers, micro-carriers, edible compositions,
CC protein supplements, fat substitutes, nutritional supplements,
CC edible coatings, photographic compositions, cosmetic compositions,
CC industrial composition, cell culture compositions and compositions
CC for use in the laboratory. Pharmaceutical compositions comprising
CC recombinant gelatin are used as vaccines. They are also used to
CC treat various joint conditions such as arthritis, athrosis and
CC other conditions related to the degeneration of cartilage and joint
CC flexibility. Recombinant gelatin is also used in food and beverage
CC industries. The present sequence is human alpha1 (I) type I collagen
CC helical domain (residues 531-1030). This sequence is a recombinant
CC gelatin.
XX
SQ Sequence 500 AA;

Query Match 65.6%; Score 42; DB 22; Length 500;
Best Local Similarity 100.0%; Pred. No. 30;
Matches 8; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 2 PQGIAGQR 9
||||||||
Db 421 PQGIAGQR 428

RESULT 32
AAB68062
ID AAB68062 standard; Protein; 500 AA.
XX
AC AAB68062;
XX
DT 09-JUL-2001 (first entry)
XX
DE Amino acid sequence of a recombinant human gelatin.
XX
KW Human; gelatin; vaccine; anaphylactic reaction.
XX
OS Homo sapiens.
XX
PN WO200134801-A2.
XX
PD 17-MAY-2001.
XX
PF 10-NOV-2000; 2000WO-US30843.
XX
PR 12-NOV-1999; 99US-0165114.
PR 15-MAY-2000; 2000US-0204437.
XX
PA (FIBR-) FIBROGEN INC.
XX
PI Chang RC, Kivirikko KI, Neff TB, Olsen DR, Polarek JW;
XX
DR WPI; 2001-308784/32.
XX
PT Vaccine formulations (I) comprising recombinant human gelatin, useful
PT for vaccinating against e.g. mumps, measles, rubella, tetanus, rabies
PT and cholera, the gelatin is non-immunogenic and confers stability at
PT ambient temperatures -
XX
PS Claim 11; Page 118-120; 130pp; English.
XX
CC The present sequence represents a human recombinant gelatin polypeptide.
CC The recombinant gelatin polypeptide is used to produce vaccine
CC formulations of the invention. The recombinant human gelatin is
CC non-immunogenic (therefore reducing anaphylactic reactions) and confers
CC stability at ambient temperatures. The vaccine formulation comprises a
CC vaccine formulated for the prevention of a disease selected from vaccinia
CC virus (small pox), polio virus (Salk and Sabin), mumps, measles, rubella,
CC diphtheria, tetanus, Varicella-Zoster (chicken pox/shingles), pertussis
CC (whooping cough), Bacille Calmette-Geurin (BCG, tuberculosis),
CC haemophillus influenzae meningitis, rabies, cholera, Japanese
CC encephalitis virus, salmonella typhi, shigella, hepatitis A and B,
CC adenovirus, yellow fever, foot and mouth disease, herpes simplex virus,
CC respiratory syncytial virus, rotavirus, Dengue, West Nile virus, turkey
CC herpes virus (Marek's disease), influenza and/or anthrax.
XX
SQ Sequence 500 AA;

```
  Query Match           65.6%;  Score 42;  DB 22;  Length 500;
  Best Local Similarity  100.0%;  Pred. No. 30;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      2 PQGIAGQR 9
          ||||||||
Db    421 PQGIAGQR 428


RESULT 33
AAE02712
ID   AAE02712 standard; Protein; 510 AA.
XX
AC   AAE02712;
XX
DT   06-AUG-2001  (first entry)
XX
DE   Recombinant human gelatin #1.
XX
KW   Human; recombinant gelatin; binding agent; stabilising agent; emulsifier;
KW   encapsulant; film-forming agent; moisturising agent; thickening agent;
KW   gelling agent; colloidal agent; adhesive agent; gel capsule; photography;
KW   plasma expander; colloidal volume replacement material; graft coating;
KW   medical sponge; medical plug; micro-carrier; edible composition;
KW   protein supplement; fat substitute; nutritional supplement; cell culture;
KW   edible coating; cosmetic; vaccine; therapy; arthritis; athrosis;
KW   cartilage degeneration; joint flexibility; food industry; beverage.
XX
OS   Homo sapiens.
XX
PN   WO200134646-A2.
XX
PD   17-MAY-2001.
XX
PF   10-NOV-2000; 2000WO-US30791.
XX
PR   12-NOV-1999;   99US-0165114.
PR   15-MAY-2000; 2000US-0204437.
XX
PA   (FIBR-) FIBROGEN INC.
XX
PI   Chang RC,  Kivirikko KI,  Neff TB,  Olsen DR,  Polarek JW;
XX
DR   WPI; 2001-329072/34.
XX
PT   Gelatin useful for pharmaceuticals, cosmetics and edible foods, is
PT   prepared recombinantly -
XX
PS   Disclosure; Page 130-131; 137pp; English.
XX
CC   The patent discloses recombinant human gelatin which is useful
CC   in various compositions including binding agents, encapsulants,
CC   stabilising agents, film-forming agents, moisturising agents,
CC   emulsifiers, thickening agents, gelling agents, colloidal agents,
CC   adhesive agents, pharmaceutical compositions, hard gel capsules,
CC   soft gel capsules, plasma expander, colloidal volume replacement
CC   materials, graft coatings, medical sponges, medical plugs,
CC   pharmaceutical stabilisers, micro-carriers, edible compositions,
CC   protein supplements, fat substitutes, nutritional supplements,
CC   edible coatings, photographic compositions, cosmetic compositions,
CC   industrial composition, cell culture compositions and compositions
CC   for use in the laboratory. Pharmaceutical compositions comprising
CC   recombinant gelatin are used as vaccines. They are also used to
CC   treat various joint conditions such as arthritis, athrosis and
CC   other conditions related to the degeneration of cartilage and joint
CC   flexibility. Recombinant gelatin is also used in food and beverage
CC   industries. The present sequence is a recombinant human gelatin.
XX
SQ   Sequence   510 AA;

  Query Match           65.6%;  Score 42;  DB 22;  Length 510;
  Best Local Similarity  100.0%;  Pred. No. 31;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      2 PQGIAGQR 9
          ||||||||
Db    269 PQGIAGQR 276


RESULT 34
AAB68066
ID   AAB68066 standard; Protein; 510 AA.
XX
AC   AAB68066;
XX
DT   09-JUL-2001  (first entry)
XX
DE   Amino acid sequence of a recombinant human gelatin.
XX
KW   Human; gelatin; vaccine; anaphylactic reaction.
XX
OS   Homo sapiens.
XX
PN   WO200134801-A2.
XX
PD   17-MAY-2001.
XX
PF   10-NOV-2000; 2000WO-US30843.
XX
PR   12-NOV-1999;   99US-0165114.
PR   15-MAY-2000; 2000US-0204437.
XX
PA   (FIBR-) FIBROGEN INC.
XX
PI   Chang RC,  Kivirikko KI,  Neff TB,  Olsen DR,  Polarek JW;
XX
DR   WPI; 2001-308784/32.
XX
PT   Vaccine formulations (I) comprising recombinant human gelatin, useful
PT   for vaccinating against e.g. mumps, measles, rubella, tetanus, rabies
PT   and cholera, the gelatin is non-immunogenic and confers stability at
PT   ambient temperatures -
XX
PS   Claim 11; Page 123-124; 130pp; English.
XX
CC   The present sequence represents a human recombinant gelatin polypeptide.
CC   The recombinant gelatin polypeptide is used to produce vaccine
CC   formulations of the invention. The recombinant human gelatin is
CC   non-immunogenic (therefore reducing anaphylactic reactions) and confers
CC   stability at ambient temperatures. The vaccine formulation comprises a
CC   vaccine formulated for the prevention of a disease selected from vaccinia
CC   virus (small pox), polio virus (Salk and Sabin), mumps, measles, rubella,
CC   diphtheria, tetanus, Varicella-Zoster (chicken pox/shingles), pertussis
CC   (whooping cough), Bacille Calmette-Geurin (BCG, tuberculosis),
CC   haemophillus influenzae meningitis, rabies, cholera, Japanese
CC   encephalitis virus, salmonella typhi, shigella, hepatitis A and B,
CC   adenovirus, yellow fever, foot and mouth disease, herpes simplex virus,
CC   respiratory syncytial virus, rotavirus, Dengue, West Nile virus, turkey
CC   herpes virus (Marek's disease), influenza and/or anthrax.
XX
SQ   Sequence   510 AA;

  Query Match           65.6%;  Score 42;  DB 22;  Length 510;
  Best Local Similarity  100.0%;  Pred. No. 31;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      2 PQGIAGQR 9
          ||||||||
Db    269 PQGIAGQR 276


RESULT 35
AAE02718
ID   AAE02718 standard; Protein; 662 AA.
XX
```

```
AC   AAE02718;
XX
DT   06-AUG-2001  (first entry)
XX
DE   Human alpha1 (I) type I collagen helical domain (residues 531-1192).
XX
KW   Human; recombinant gelatin; binding agent; stabilising agent; emulsifier;
KW   encapsulant; film-forming agent; moisturising agent; thickening agent;
KW   gelling agent; colloidal agent; adhesive agent; gel capsule; photography;
KW   plasma expander; colloidal volume replacement material; graft coating;
KW   medical sponge; medical plug; micro-carrier; edible composition;
KW   protein supplement; fat substitute; nutritional supplement; cell culture;
KW   edible coating; cosmetic; vaccine; therapy; arthritis; athrosis;
KW   cartilage degeneration; joint flexibility; food industry; beverage;
KW   alpha1 (I) type I collagen.
XX
OS   Homo sapiens.
XX
PN   WO200134646-A2.
XX
PD   17-MAY-2001.
XX
PF   10-NOV-2000; 2000WO-US30791.
XX
PR   12-NOV-1999;   99US-0165114.
PR   15-MAY-2000; 2000US-0204437.
XX
PA   (FIBR-) FIBROGEN INC.
XX
PI   Chang RC,  Kivirikko KI,  Neff TB,  Olsen DR,  Polarek JW;
XX
DR   WPI; 2001-329072/34.
XX
PT   Gelatin useful for pharmaceuticals, cosmetics and edible foods, is
PT   prepared recombinantly -
XX
PS   Claim 21; Page 135-137; 137pp; English.
XX
CC   The patent discloses recombinant human gelatin which is useful
CC   in various compositions including binding agents, encapsulants,
CC   stabilising agents, film-forming agents, moisturising agents,
CC   emulsifiers, thickening agents, gelling agents, colloidal agents,
CC   adhesive agents, pharmaceutical compositions, hard gel capsules,
CC   soft gel capsules, plasma expander, colloidal volume replacement
CC   materials, graft coatings, medical sponges, medical plugs,
CC   pharmaceutical stabilisers, micro-carriers, edible compositions,
CC   protein supplements, fat substitutes, nutritional supplements,
CC   edible coatings, photographic compositions, cosmetic compositions,
CC   industrial composition, cell culture compositions and compositions
CC   for use in the laboratory. Pharmaceutical compositions comprising
CC   recombinant gelatin are used as vaccines. They are also used to
CC   treat various joint conditions such as arthritis, athrosis and
CC   other conditions related to the degeneration of cartilage and joint
CC   flexibility. Recombinant gelatin is also used in food and beverage
CC   industries. The present sequence is human alpha1 (I) type I collagen
CC   helical domain (residues 531-1192). This sequence is a recombinant
CC   gelatin.
XX
SQ   Sequence   662 AA;

  Query Match             65.6%;  Score 42;  DB 22;  Length 662;
  Best Local Similarity   100.0%;  Pred. No. 40;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       2 PQGIAGQR 9
           ||||||||
Db     421 PQGIAGQR 428


RESULT 36
AAB68072
ID   AAB68072 standard; Protein; 662 AA.
XX
AC   AAB68072;
XX
DT   09-JUL-2001  (first entry)
XX
DE   Amino acid sequence of a recombinant human gelatin.
XX
KW   Human; gelatin; vaccine; anaphylactic reaction.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   Misc-difference 53
FT                   /note= "this residue is given as unknown as it is
FT                          illegible in the specification"
XX
PN   WO200134801-A2.
XX
PD   17-MAY-2001.
XX
PF   10-NOV-2000; 2000WO-US30843.
XX
PR   12-NOV-1999;   99US-0165114.
PR   15-MAY-2000; 2000US-0204437.
XX
PA   (FIBR-) FIBROGEN INC.
XX
PI   Chang RC,  Kivirikko KI,  Neff TB,  Olsen DR,  Polarek JW;
XX
DR   WPI; 2001-308784/32.
XX
PT   Vaccine formulations (I) comprising recombinant human gelatin, useful
PT   for vaccinating against e.g. mumps, measles, rubella, tetanus, rabies
PT   and cholera, the gelatin is non-immunogenic and confers stability at
PT   ambient temperatures -
XX
PS   Claim 11; Page 128-130; 130pp; English.
XX
CC   The present sequence represents a human recombinant gelatin polypeptide.
CC   The recombinant gelatin polypeptide is used to produce vaccine
CC   formulations of the invention. The recombinant human gelatin is
CC   non-immunogenic (therefore reducing anaphylactic reactions) and confers
CC   stability at ambient temperatures. The vaccine formulation comprises a
CC   vaccine formulated for the prevention of a disease selected from vaccinia
CC   virus (small pox), polio virus (Salk and Sabin), mumps, measles, rubella,
CC   diphtheria, tetanus, Varicella-Zoster (chicken pox/shingles), pertussis
CC   (whooping cough), Bacille Calmette-Geurin (BCG, tuberculosis),
CC   haemophillus influenzae meningitis, rabies, cholera, Japanese
CC   encephalitis virus, salmonella typhi, shigella, hepatitis A and B,
CC   adenovirus, yellow fever, foot and mouth disease, herpes simplex virus,
CC   respiratory syncytial virus, rotavirus, Dengue, West Nile virus, turkey
CC   herpes virus (Marek's disease), influenza and/or anthrax.
XX
SQ   Sequence   662 AA;

  Query Match             65.6%;  Score 42;  DB 22;  Length 662;
  Best Local Similarity   100.0%;  Pred. No. 40;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       2 PQGIAGQR 9
           ||||||||
Db     421 PQGIAGQR 428


RESULT 37
AAY06240
ID   AAY06240 standard; Protein; 822 AA.
XX
AC   AAY06240;
XX
DT   23-AUG-1999  (first entry)
XX
DE   Mouse recombinant type I collagen COL1A1-3.
XX
```

```
KW   Type I collagen; COL1A2-3; mouse; silver halide; emulsion;
KW   peptizer; photography.
XX
OS   Mus sp.
XX
FH   Key             Location/Qualifiers
FT   Cleavage-site   38..41
FT                   /note= "MGPR protease recognition sequence"
FT   Cleavage-site   122..125
FT                   /note= "MGPR protease recognition sequence"
XX
PN   EP926543-A1.
XX
PD   30-JUN-1999.
XX
PF   15-DEC-1998;   98EP-0204263.
XX
PR   24-DEC-1997;   97NL-1007908.
XX
PA   (FUJF ) FUJI PHOTO FILM BV.
XX
PI   Bouwstra JB,  De Wolf FA,  Mooibroek A,  Van Den Bosch TJ;
PI   Van Heerde GV,  Van Rijn AC,  Werten MWT,  Wind RD;
XX
DR   WPI; 1999-349297/30.
XX
PT   New tabular silver halide emulsion, useful for production of
PT   components for photographic products
XX
PS   Claim 9; Fig 12; 30pp; English.
XX
CC   This is the amino acid sequence of recombinant mouse type I
CC   collagen COL1A1-3, obtained by expression of COL1A1-3 cDNA from
CC   vector pCOL1A1-3 in transformed Pichia pastoris GS115 host cells.
CC   The invention relates to a new tabular silver halide emulsion
CC   comprising silver halide grains nucleated in the presence of a
CC   nucleation peptizer and grown in the presence of a growth peptizer,
CC   at least one of the peptizers being a pure collagen-like material,
CC   such as the present protein, prepared by genetic engineering of a
CC   native collagen-encoding nucleic acid.  Also claimed is production
CC   of the recombinant collagen-like polypeptide comprising expression
CC   of a collagen-like polypeptide nucleic acid sequence by a
CC   microorganism selected from Hansenula, Trichoderma, Aspergillus and
CC   preferably P. pastoris, the collagen-like polypeptide being obtained
CC   at a level greater than 0.95 g/l (especially over 3 g/l) and free of
CC   helix structure.  The emulsion is suitable for photographic
CC   application.  Recombinant DNA technology enables the efficient
CC   production of large amounts of substantially pure collagen material,
CC   providing a high level of expression without requiring expensive
CC   media, expression hosts or non-secreting expression hosts.  The
CC   collagen can be selected and/or adapted for optimal use in each
CC   particular stage of the production process of the photographic
CC   product.  Removal of collagen MGPR motifs that are recognised by a
CC   P. pastoris protease will also increase expression levels.
XX
SQ   Sequence   822 AA;

  Query Match             65.6%;  Score 42;  DB 20;  Length 822;
  Best Local Similarity   100.0%;  Pred. No. 50;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      2 PQGIAGQR 9
          ||||||||
Db    772 PQGIAGQR 779


RESULT 38
AAB70107
ID   AAB70107 standard; protein; 936 AA.
XX
AC   AAB70107;
XX
DT   18-MAY-2001  (first entry)
XX
DE   Gelatin protein.
XX
KW   Gelatin; protease; jelly production; gelatin capsule synthesis;
KW   drug synthesis.
XX
OS   Unidentified.
XX
FH   Key             Location/Qualifiers
FT   Modified-site   1..936
FT                   note= "Xaa = hydroxyproline"
XX
PN   JP2000325095-A.
XX
PD   28-NOV-2000.
XX
PF   18-MAY-1999;   99JP-0137528.
XX
PR   18-MAY-1999;   99JP-0137528.
XX
PA   (MIYA-) MIYAGI KAGAKU KOGYO KK.
PA   (DAII-) DAIICHI KAKAGU YAKUHIN KK.
XX
DR   WPI; 2001-228834/24.
XX
PT   Preparing degraded gelatin peptides useful in drugs, cosmetics and
PT   foodstuffs, using novel protease which cuts protein at specific points
PT   so that resulting peptides have specific N-terminal amino acid
PT   sequences -
XX
PS   Disclosure; Fig 3; 16pp; Japanese.
XX
CC   The present sequence is provided in a specification relating to a method
CC   for manufacturing peptides from proteins. The proteins are degraded using
CC   a novel protease enzyme which cuts the proteins at between 1 and 3
CC   points. The resulting peptides have an N-terminal end having a specific
CC   amino acid sequence. The method may be used in the manufacture of
CC   jelly-like foodstuffs, gelatin capsules and drugs. It is also used for
CC   coating the surface of a material useful as an artificial living tissue.
CC   The gelatin peptides prepared using the novel protease enzyme have
CC   reduced allergenicity and antigenicity and dissolve readily in cold
CC   water. The jelly-like gels prepared using the gelatin peptides fuse well
CC   with other liquids even at room temperature.
XX
SQ   Sequence   936 AA;

  Query Match             65.6%;  Score 42;  DB 22;  Length 936;
  Best Local Similarity   100.0%;  Pred. No. 57;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      2 PQGIAGQR 9
          ||||||||
Db    669 PQGIAGQR 676


RESULT 39
AAY84541
ID   AAY84541 standard; Protein; 1057 AA.
XX
AC   AAY84541;
XX
DT   25-JUL-2000  (first entry)
XX
DE   Amino acid sequence of a human collagen 1 (alpha1) protein.
XX
KW   Extracellular matrix protein; self aggregation; hydroxylated proline;
KW   trans-4-hydroxyproline; 3-hydroxyproline; recombinant protein production;
KW   collagen; fibrinogen; fibronectin; post translational hydroxylation.
XX
OS   Homo sapiens.
XX
PN   EP992586-A2.
XX
```

PD 12-APR-2000.
XX
PF 07-OCT-1999; 99EP-0119184.
XX
PR 09-OCT-1998; 98US-0169768.
XX
PA (USSU) US SURGICAL CORP.
XX
PI Gruskin EA, Buechter DD, Zhang G, Connolly K;
XX
DR WPI; 2000-259138/23.
DR N-PSDB; AAA12502.
XX
PT Production of extracellular matrix proteins containing
PT 4-trans-hydroxyproline results in native self aggregating proteins,
PT useful on medical implants -
XX
PS Disclosure; Fig 27A-E; 260pp; English.
XX
CC The specification describes a method for producing an extracellular
CC matrix protein or its fragment. The extracellular matrix protein is
CC capable of self aggregating in a cell which does not ordinarily
CC hydroxylated prolines. The method comprises optimising a nucleic acid
CC sequence for expression in the cell by substitution of codons preferred
CC by that cell for naturally occurring codons not preferred by the cell;
CC incorporating the nucleic acid sequence into the cell; and contacting
CC the cell with a hypertonic growth medium containing at least one amino
CC acid, selected from the group consisting of trans-4-hydroxyproline and
CC 3-hydroxyproline to allow at least one of the amino acids to be
CC assimilated into the cell and incorporated into the extracellular matrix
CC protein. The method may be used to make host cells assimilate and
CC incorporate trans-4-hydroxyproline into proteins. This is especially
CC useful in the recombinant production of proteins such as collagen,
CC fibrinogen and fibronectin whose ability to self aggregate and produce
CC functional proteins depends on the post translational hydroxylation of
CC proline. The method is also useful in studying the structure and function
CC of polypeptides which do not normally contain trans-4-hydroxyproline.
CC The present sequence represents a human collagen 1 (alpha1) protein,
CC which may be produced using the method of the invention.
XX
SQ Sequence 1057 AA;

Query Match 65.6%; Score 42; DB 21; Length 1057;
Best Local Similarity 100.0%; Pred. No. 64;
Matches 8; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 2 PQGIAGQR 9
||||||||
Db 790 PQGIAGQR 797

RESULT 40
AAY84544
ID AAY84544 standard; Protein; 1057 AA.
XX
AC AAY84544;
XX
DT 25-JUL-2000 (first entry)
XX
DE A human collagen 1 (alpha1) protein helical region.
XX
KW Extracellular matrix protein; self aggregation; hydroxylated proline;
KW trans-4-hydroxyproline; 3-hydroxyproline; recombinant protein production;
KW collagen; fibrinogen; fibronectin; post translational hydroxylation.
XX
OS Homo sapiens.
XX
PN EP992586-A2.
XX
PD 12-APR-2000.
XX
PF 07-OCT-1999; 99EP-0119184.
XX
PR 09-OCT-1998; 98US-0169768.
XX
PA (USSU) US SURGICAL CORP.
XX
PI Gruskin EA, Buechter DD, Zhang G, Connolly K;
XX
DR WPI; 2000-259138/23.
DR N-PSDB; AAA12503.
XX
PT Production of extracellular matrix proteins containing
PT 4-trans-hydroxyproline results in native self aggregating proteins,
PT useful on medical implants -
XX
PS Example 10; Fig 39A-E; 260pp; English.
XX
CC The specification describes a method for producing an extracellular
CC matrix protein or its fragment. The extracellular matrix protein is
CC capable of self aggregating in a cell which does not ordinarily
CC hydroxylated prolines. The method comprises optimising a nucleic acid
CC sequence for expression in the cell by substitution of codons preferred
CC by that cell for naturally occurring codons not preferred by the cell;
CC incorporating the nucleic acid sequence into the cell; and contacting
CC the cell with a hypertonic growth medium containing at least one amino
CC acid, selected from the group consisting of trans-4-hydroxyproline and
CC 3-hydroxyproline to allow at least one of the amino acids to be
CC assimilated into the cell and incorporated into the extracellular matrix
CC protein. The method may be used to make host cells assimilate and
CC incorporate trans-4-hydroxyproline into proteins. This is especially
CC useful in the recombinant production of proteins such as collagen,
CC fibrinogen and fibronectin whose ability to self aggregate and produce
CC functional proteins depends on the post translational hydroxylation of
CC proline. The method is also useful in studying the structure and function
CC of polypeptides which do not normally contain trans-4-hydroxyproline.
CC The present sequence represents human collagen 1 (alpha1) helical region,
CC which may be produced using the method of the invention.
XX
SQ Sequence 1057 AA;

Query Match 65.6%; Score 42; DB 21; Length 1057;
Best Local Similarity 100.0%; Pred. No. 64;
Matches 8; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 2 PQGIAGQR 9
||||||||
Db 790 PQGIAGQR 797

RESULT 41
AAY84403
ID AAY84403 standard; Protein; 1058 AA.
XX
AC AAY84403;
XX
DT 12-JUL-2000 (first entry)
XX
DE Amino acid sequence of human type 1 (alpha1) collagen polypeptide.
XX
KW Alpha1 collagen; 3,4-dehydro-L-proline; epoxidation; 3,4-epoxyproline;
KW collagen; mussel adhesive protein; bioadhesive.
XX
OS Homo sapiens.
XX
PN WO200014201-A1.
XX
PD 16-MAR-2000.
XX
PF 07-SEP-1999; 99WO-US20462.
XX
PR 09-SEP-1998; 98US-0099652.
XX
PA (USSU) US SURGICAL CORP.
PA (PAOL/) PAOLELLA D N.
PA (GRUS/) GRUSKIN E A.

```
PA   (BUEC/) BUECHTER D D.
XX
PI   Paolella DN,  Gruskin EA,  Buechter DD;
XX
DR   WPI; 2000-271051/23.
DR   N-PSDB; AAZ99843.
XX
PT   Incorporating non-natural amino acid into polypeptide, useful e.g. for
PT   production of bioadhesives, by epoxidation or substitution of
PT   dehydroproline residues -
XX
PS   Disclosure; Fig 6; 66pp; English.
XX
CC   The present sequence represents a human type 1 (alpha1) collagen protein.
CC   Peptides derived from the protien were used to demonstrate incorporation
CC   of 3,4-dehydro-L-proline into the peptide, using the method of the
CC   invention. The specification describes a method for the incorporation
CC   of non-natural amino acid into a polypeptide. The method comprises
CC   reacting at least one 3,4-dehydroproline residue in the polypeptide
CC   with an epoxidation reagent from a polypeptide containing at least
CC   one 3,4-epoxyproline residue. The method is used for studying the
CC   effects of non-natural amino acids on structure and function of
CC   polypeptides. The method is also useful for commercial production of
CC   collagen or mussel adhesive proteins (which are useful as bioadhesives),
CC   and for incorporating a wide variety of groups, including therapeutic
CC   ligands and biological probes, into polypeptides.
XX
SQ   Sequence   1058 AA;

  Query Match             65.6%;  Score 42;  DB 21;  Length 1058;
  Best Local Similarity   100.0%;  Pred. No. 64;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       2 PQGIAGQR 9
           ||||||||
Db     791 PQGIAGQR 798


RESULT 42
AAR89472
ID   AAR89472 standard; Protein; 1107 AA.
XX
AC   AAR89472;
XX
DT   01-OCT-1996  (first entry)
XX
DE   Collagen/decorin(aa46-93) fusion protein.
XX
KW   Transforming growth factor; TGF-beta-1; collagen IA; osteogenesis;
KW   bone formation; tissue repair; fusion protein.
XX
OS   Synthetic.
XX
FH   Key             Location/Qualifiers
FT   Domain          1..1057
FT                   /label= Collagen-IA
FT                   /note= "collagen IA alpha-helical domain"
FT   Peptide         1058..1059
FT                   /label= Linker_peptide
FT   Domain          1060..1107
FT                   /label= Decorin
FT                   /note= "amino acids P46 to G93 of mature
FT                        decorin"
FT   Misc-difference 887
FT                   /note= "unidentified amino acid"
FT   Misc-difference 890
FT                   /note= "unidentified amino acid"
XX
PN   CA2151547-A.
XX
PD   11-DEC-1995.
XX
PF   12-JUN-1995;   95CA-2151547.
XX
PR   10-JUN-1994;   94US-0259263.
XX
PA   (USSU ) US SURGICAL CORP.
XX
PI   Espino P,  Gruskin EA;
XX
DR   WPI; 1996-140144/15.
DR   N-PSDB; AAT16518.
XX
PT   Chimaeric DNA encoding protein contg. extracellular matrix protein
PT   domain - and cellular regulatory factor domain, partic. useful as
PT   osteogenic agents, also related vectors, transformed cells and
PT   chimaeric proteins.
XX
PS   Disclosure; Fig 8; 59pp; English.
XX
CC   A fusion protein (AAR89472) comprises the alpha-helical region of
CC   human collagen I(a) linked to amino acids 46-93 of human mature
CC   dermatan sulphate proteoglycan (decorin). It can be expressed in
CC   Escherichia coli transformants carrying a vector incorporating a
CC   chimeric gene (AAT16518) coding for the fusion. The decorin binds to
CC   type I collagen and thus affects Elbril formation. It inhibits
CC   the cell attachment-promoting activity of collagen and fibrinogen
CC   by binding to such molecules near their cell binding sites. The
CC   collagen moiety provides an integral substratum or scaffolding for
CC   the decorin. The fusion protein acts to reduce scarring of healing
CC   tissue.
XX
SQ   Sequence   1107 AA;

  Query Match             65.6%;  Score 42;  DB 17;  Length 1107;
  Best Local Similarity   100.0%;  Pred. No. 67;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       2 PQGIAGQR 9
           ||||||||
Db     790 PQGIAGQR 797


RESULT 43
AAY84540
ID   AAY84540 standard; Protein; 1107 AA.
XX
AC   AAY84540;
XX
DT   25-JUL-2000  (first entry)
XX
DE   Amino acid sequence of a chimeric collagen 1 (alpha1)/decorin protein.
XX
KW   Extracellular matrix protein; self aggregation; hydroxylated proline;
KW   trans-4-hydroxyproline; 3-hydroxyproline; recombinant protein production;
KW   collagen; fibrinogen; fibronectin; post translational hydroxylation;
KW   decorin; chimera.
XX
OS   Chimeric - Homo sapiens.
OS   Chimeric - Unidentified.
XX
FH   Key             Location/Qualifiers
FT   Misc-difference 858
FT                   /note= "Gly encoded by GCT"
XX
PN   EP992586-A2.
XX
PD   12-APR-2000.
XX
PF   07-OCT-1999;   99EP-0119184.
XX
PR   09-OCT-1998;   98US-0169768.
XX
PA   (USSU ) US SURGICAL CORP.
XX
PI   Gruskin EA,  Buechter DD,  Zhang G,  Connolly K;
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XX
DR   WPI; 2000-259138/23.
DR   N-PSDB; AAA12500.
XX
PT   Production of extracellular matrix proteins containing
PT   4-trans-hydroxyproline results in native self aggregating proteins,
PT   useful on medical implants -
XX
PS   Claim 24; Fig 18; 260pp; English.
XX
CC   The specification describes a method for producing an extracellular
CC   matrix protein or its fragment. The extracellular matrix protein is
CC   capable of self aggregating in a cell which does not ordinarily
CC   hydroxylated prolines. The method comprises optimising a nucleic acid
CC   sequence for expression in the cell by substitution of codons preferred
CC   by that cell for naturally occurring codons not preferred by the cell;
CC   incorporating the nucleic acid sequence into the cell; and contacting
CC   the cell with a hypertonic growth medium containing at least one amino
CC   acid, selected from the group consisting of trans-4-hydroxyproline and
CC   3-hydroxyproline to allow at least one of the amino acids to be
CC   assimilated into the cell and incorporated into the extracellular matrix
CC   protein. The method may be used to make host cells assimilate and
CC   incorporate trans-4-hydroxyproline into proteins. This is especially
CC   useful in the recombinant production of proteins such as collagen,
CC   fibrinogen and fibronectin whose ability to self aggregate and produce
CC   functional proteins depends on the post translational hydroxylation of
CC   proline. The method is also useful in studying the structure and function
CC   of polypeptides which do not normally contain trans-4-hydroxyproline.
CC   The present sequence represents a chimeric collagen 1 (alpha1)/decorin
CC   protein, which may be produced using the method of the invention.
XX
SQ   Sequence   1107 AA;

  Query Match             65.6%;  Score 42;  DB 21;  Length 1107;
  Best Local Similarity   100.0%;  Pred. No. 67;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       2 PQGIAGQR 9
           ||||||||
Db     790 PQGIAGQR 797


RESULT 44
AAR89469
ID   AAR89469 standard; Protein; 1169 AA.
XX
AC   AAR89469;
XX
DT   01-OCT-1996  (first entry)
XX
DE   Collagen/BMP-2B fusion protein.
XX
KW   Bone morphogenic protein 2B; BMP-2B; collagen IA; osteogenesis;
KW   fusion protein.
XX
OS   Synthetic.
XX
FH   Key             Location/Qualifiers
FT   Domain          1..1057
FT                   /label= Collagen-IA
FT                   /note= "collagen IA alpha-helical domain"
FT   Peptide         1058..1059
FT                   /label= Linker_peptide
FT   Domain          1060..1169
FT                   /label= BMP-2B
FT                   /note= "human mature BMP-2B"
FT   Misc-difference 887
FT                   /note= "unidentified amino acid"
FT   Misc-difference 890
FT                   /note= "unidentified amino acid"
XX
PN   CA2151547-A.
XX
PD   11-DEC-1995.
XX
PF   12-JUN-1995;   95CA-2151547.
XX
PR   10-JUN-1994;   94US-0259263.
XX
PA   (USSU ) US SURGICAL CORP.
XX
PI   Espino P,  Gruskin EA;
XX
DR   WPI; 1996-140144/15.
DR   N-PSDB; AAT16515.
XX
PT   Chimaeric DNA encoding protein contg. extracellular matrix protein
PT   domain  - and cellular regulatory factor domain, partic. useful as
PT   osteogenic agents, also related vectors, transformed cells and
PT   chimaeric proteins.
XX
PS   Disclosure; Fig 5; 59pp; English.
XX
CC   A fusion protein (AAR89469) comprises the alpha-helical region of
CC   human collagen I(a) linked to the human mature bone morphogenic
CC   protein 2B (BMP2B).  It can be expressed in Escherichia coli
CC   transformants carrying a vector incorporating a chimeric gene
CC   (AAT16515) coding for the fusion.  The BMP moiety induces
CC   osteogenesis, while the collagen moiety provides an integral
CC   substratum or scaffolding for the BMP and cells involved in
CC   reconstruction and growth.  The fusion protein provides sustained
CC   release and delivery of BMP to a target tissue.
XX
SQ   Sequence   1169 AA;

  Query Match             65.6%;  Score 42;  DB 17;  Length 1169;
  Best Local Similarity   100.0%;  Pred. No. 70;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       2 PQGIAGQR 9
           ||||||||
Db     790 PQGIAGQR 797


RESULT 45
AAY84537
ID   AAY84537 standard; Protein; 1169 AA.
XX
AC   AAY84537;
XX
DT   25-JUL-2000  (first entry)
XX
DE   Amino acid sequence of a chimeric collagen 1 (alpha1)/BMP-2B protein.
XX
KW   Extracellular matrix protein; self aggregation; hydroxylated proline;
KW   trans-4-hydroxyproline; 3-hydroxyproline; recombinant protein production;
KW   collagen; fibrinogen; fibronectin; post translational hydroxylation; ss.
KW   bone morphogenic protein; BMP-2B; chimera.
XX
OS   Chimeric - Homo sapiens.
OS   Chimeric - Unidentified.
XX
FH   Key             Location/Qualifiers
FT   Misc-difference 677
FT                   /note= "Ala encoded by G"
FT   Misc-difference 887
FT                   /note= "unspecified amino acid encoded by CT"
FT   Misc-difference 890
FT                   /note= "unspecified amino acid encoded by CT"
XX
PN   EP992586-A2.
XX
PD   12-APR-2000.
XX
PF   07-OCT-1999;   99EP-0119184.
XX
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PR   09-OCT-1998;   98US-0169768.
XX
PA   (USSU ) US SURGICAL CORP.
XX
PI   Gruskin EA,  Buechter DD,  Zhang G,  Connolly K;
XX
DR   WPI; 2000-259138/23.
DR   N-PSDB; AAA12497.
XX
PT   Production of extracellular matrix proteins containing
PT   4-trans-hydroxyproline results in native self aggregating proteins,
PT   useful on medical implants -
XX
PS   Claim 22; Fig 13; 260pp; English.
XX
CC   The specification describes a method for producing an extracellular
CC   matrix protein or its fragment. The extracellular matrix protein is
CC   capable of self aggregating in a cell which does not ordinarily
CC   hydroxylated prolines. The method comprises optimising a nucleic acid
CC   sequence for expression in the cell by substitution of codons preferred
CC   by that cell for naturally occurring codons not preferred by the cell;
CC   incorporating the nucleic acid sequence into the cell; and contacting
CC   the cell with a hypertonic growth medium containing at least one amino
CC   acid, selected from the group consisting of trans-4-hydroxyproline and
CC   3-hydroxyproline to allow at least one of the amino acids to be
CC   assimilated into the cell and incorporated into the extracellular matrix
CC   protein. The method may be used to make host cells assimilate and
CC   incorporate trans-4-hydroxyproline into proteins. This is especially
CC   useful in the recombinant production of proteins such as collagen,
CC   fibrinogen and fibronectin whose ability to self aggregate and produce
CC   functional proteins depends on the post translational hydroxylation of
CC   proline. The method is also useful in studying the structure and function
CC   of polypeptides which do not normally contain trans-4-hydroxyproline.
CC   The present sequence represents a chimeric collagen 1 (alphal)/bone
CC   morphogenic protein-2B (bmp-2b) protein, which may be produced using the
CC   method of the invention.
XX
SQ   Sequence   1169 AA;

  Query Match             65.6%;  Score 42;  DB 21;  Length 1169;
  Best Local Similarity   100.0%;  Pred. No. 70;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      2 PQGIAGQR 9
          ||||||||
Db    790 PQGIAGQR 797


RESULT 46
AAR89470
ID   AAR89470 standard; Protein; 1171 AA.
XX
AC   AAR89470;
XX
DT   01-OCT-1996  (first entry)
XX
DE   Collagen/TGF-beta-1 fusion protein.
XX
KW   Transforming growth factor; TGF-beta-1; collagen IA; osteogenesis;
KW   bone formation; tissue repair; fusion protein.
XX
OS   Synthetic.
XX
FH   Key             Location/Qualifiers
FT   Domain          1..1057
FT                   /label= Collagen-IA
FT                   /note= "collagen IA alpha-helical domain"
FT   Peptide         1058..1059
FT                   /label= Linker_peptide
FT   Domain          1060..1171
FT                   /label= TGF-beta-1
FT                   /note= "human mature TFF-beta-1"
FT   Misc-difference 887
FT                   /note= "unidentified amino acid"
FT   Misc-difference 890
FT                   /note= "unidentified amino acid"
XX
PN   CA2151547-A.
XX
PD   11-DEC-1995.
XX
PF   12-JUN-1995;   95CA-2151547.
XX
PR   10-JUN-1994;   94US-0259263.
XX
PA   (USSU ) US SURGICAL CORP.
XX
PI   Espino P,  Gruskin EA;
XX
DR   WPI; 1996-140144/15.
DR   N-PSDB; AAT16516.
XX
PT   Chimaeric DNA encoding protein contg. extracellular matrix protein
PT   domain  - and cellular regulatory factor domain, partic. useful as
PT   osteogenic agents, also related vectors, transformed cells and
PT   chimaeric proteins.
XX
PS   Disclosure; Fig 6; 59pp; English.
XX
CC   A fusion protein (AAR89470) comprises the alpha-helical region of
CC   human collagen I(a) linked to the human mature transforming
CC   growth factor beta-1 (TGF-beta-1).  It can be expressed in
CC   Escherichia coli transformants carrying a vector incorporating a
CC   chimeric gene (AAT16516) coding for the fusion.  The TGF-beta-
CC   moiety increases efficacy of the body's normal soft tissue
CC   repair response and also induces osteogenesis.  The collagen
CC   moiety provides an integral substratum or scaffolding for the
CC   TGF and cells involved in reconstruction and growth.  The fusion
CC   protein provides sustained release and delivery of TGF-beta-1
CC   to a target tissue.
XX
SQ   Sequence   1171 AA;

  Query Match             65.6%;  Score 42;  DB 17;  Length 1171;
  Best Local Similarity   100.0%;  Pred. No. 71;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      2 PQGIAGQR 9
          ||||||||
Db    790 PQGIAGQR 797


RESULT 47
AAY84538
ID   AAY84538 standard; Protein; 1171 AA.
XX
AC   AAY84538;
XX
DT   25-JUL-2000  (first entry)
XX
DE   A chimeric collagen 1 (alphal)/TGF-betal protein.
XX
KW   Extracellular matrix protein; self aggregation; hydroxylated proline;
KW   trans-4-hydroxyproline; 3-hydroxyproline; recombinant protein production;
KW   collagen; fibrinogen; fibronectin; post translational hydroxylation; ss.
KW   transforming growth factor-betal; TGF-betal; chimera.
XX
OS   Chimeric - Homo sapiens.
OS   Chimeric - Unidentified.
XX
FH   Key             Location/Qualifiers
FT   Misc-difference 858
FT                   /note= "Gly encoded by GCT"
XX
PN   EP992586-A2.
XX
```

PD 12-APR-2000.
XX
PF 07-OCT-1999; 99EP-0119184.
XX
PR 09-OCT-1998; 98US-0169768.
XX
PA (USSU) US SURGICAL CORP.
XX
PI Gruskin EA, Buechter DD, Zhang G, Connolly K;
XX
DR WPI; 2000-259138/23.
DR N-PSDB; AAA12498.
XX
PT Production of extracellular matrix proteins containing
PT 4-trans-hydroxyproline results in native self aggregating proteins,
PT useful on medical implants -
XX
PS Claim 23; Fig 15; 260pp; English.
XX
CC The specification describes a method for producing an extracellular
CC matrix protein or its fragment. The extracellular matrix protein is
CC capable of self aggregating in a cell which does not ordinarily
CC hydroxylated prolines. The method comprises optimising a nucleic acid
CC sequence for expression in the cell by substitution of codons preferred
CC by that cell for naturally occurring codons not preferred by the cell;
CC incorporating the nucleic acid sequence into the cell; and contacting
CC the cell with a hypertonic growth medium containing at least one amino
CC acid, selected from the group consisting of trans-4-hydroxyproline and
CC 3-hydroxyproline to allow at least one of the amino acids to be
CC assimilated into the cell and incorporated into the extracellular matrix
CC protein. The method may be used to make host cells assimilate and
CC incorporate trans-4-hydroxyproline into proteins. This is especially
CC useful in the recombinant production of proteins such as collagen,
CC fibrinogen and fibronectin whose ability to self aggregate and produce
CC functional proteins depends on the post translational hydroxylation of
CC proline. The method is also useful in studying the structure and function
CC of polypeptides which do not normally contain trans-4-hydroxyproline.
CC The present sequence represents chimeric collagen 1 (alphal)/transforming
CC growth factor-beta1 (TGF-beta1) protein, which may be produced using the
CC method of the invention.
XX
SQ Sequence 1171 AA;

Query Match 65.6%; Score 42; DB 21; Length 1171;
Best Local Similarity 100.0%; Pred. No. 71;
Matches 8; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 2 PQGIAGQR 9
||||||||
Db 790 PQGIAGQR 797

RESULT 48
AAR71701
ID AAR71701 standard; protein; 1341 AA.
XX
AC AAR71701;
XX
DT 17-OCT-1995 (first entry)
XX
DE Collagen alpha 1 (I) chain precursor.
XX
KW Collagen; antibody; immunoassay; metabolism; diagnosis; monitoring;
KW disorder; osteoporosis; metastatic progression; Paget's disease;
KW hyperthyroidism; bone; resorption; rheumatoid arthritis;
KW osteoarthritis; vasculitis syndrome.
XX
OS Homo sapiens.
XX
FH Key Location/Qualifiers
FT Misc-difference 2028
FT /note= "Unidentified amino acid."
XX

PN WO9508115-A.
XX
PD 23-MAR-1995.
XX
PF 19-SEP-1994; 94WO-DK00348.
XX
PR 17-SEP-1993; 93DK-0001040.
XX
PA (OSTE-) OSTEOMETER AS.
XX
PI Bonde M, Qvist P;
XX
DR WPI; 1995-131456/17.
XX
PT Assaying collagen fragments in body fluid by immunoassay - using
PT antibodies raised against synthetic peptide(s) contg. potential
PT crosslinking sites, to diagnose and monitor disorders of collagen
PT metabolism, e.g. osteoporosis.
XX
PS Disclosure (Appendix A); Page 49; 87pp; English.
XX
CC Determination of collagen fragments in body fluids can be achieved
CC by immunoassay using antibodies directed against synthetic peptides
CC derived from collagen which contain sites of potential crosslinking.
CC The method is used to diagnose and monitor treatment of disorders of
CC collagen metabolism (degredation of type I collagen may indicate
CC osteoporosis, metastatic progression, Paget's disease,
CC hyperthyroidism or other conditions involving excessive bone
CC resorption; degredation of type II collagen may indicate rheumatoid
CC arthritis or osteoarthritis; and of type III collagen, vaculitis
CC syndrome). The method can also be used to assess the toxicity of a
CC compound and to test drugs for their effect on collagen metabolism.
XX
SQ Sequence 1341 AA;

Query Match 65.6%; Score 42; DB 16; Length 1341;
Best Local Similarity 100.0%; Pred. No. 81;
Matches 8; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 2 PQGIAGQR 9
||||||||
Db 828 PQGIAGQR 835

RESULT 49
AAY96122
ID AAY96122 standard; Peptide; 1341 AA.
XX
AC AAY96122;
XX
DT 19-DEC-2000 (first entry)
XX
DE Collagen type I alpha-1.
XX
KW Collagen type I; osteoporosis; bone resportion; Paget's disease;
KW hyperparathyroidism; metastasis; assay; diagnosis.
XX
OS Homo sapiens.
XX
FH Key Location/Qualifiers
FT Misc-difference 924
FT /note= "unidentified residue"
FT Misc-difference 927
FT /note= "unidentified residue"
FT Misc-difference 1127
FT /note= "unidentified residue"
FT Misc-difference 1268
FT /note= "unidentified residue"
XX
PN US6110689-A.
XX
PD 29-AUG-2000.
XX

PF 04-NOV-1997; 97US-0963825.
XX
PR 21-JAN-1994; 94US-0187319.
XX
PA (OSTE-) OSTEOMETER AS.
XX
PI Bonde M, Qvist P;
XX
DR WPI; 2000-586349/55.
XX
PT Assaying type I collagen fragments for diagnosing osteoporosis in
PT postmenopausal woman, involves contacting body fluid with synthetic
PT collagen peptide and antibody and quantifying by competitive binding
PT assay -
XX
PS Disclosure; Column 23-37; 41pp; English.
XX
CC The present sequence is that of human type I collagen alpha-1.
CC The invention is based on the discovery of the presence of
CC particular collagen fragments in body fluids of patients compared
CC with those of healthy subjects. These fragments are generated
CC upon collagen degradation and are partly characterised by the
CC presence of potential sites for crosslinking. A method for
CC assaying collagen fragments in a body fluid sample is based on the
CC competitive binding to immunological binding partners of collagen
CC fragments in the sample and of synthetic peptides derived from
CC collagen and containing crosslinkable sites (see AAY96105-11). When
CC considering the degradation of type I collagen, the assay can be
CC used as a means of identifying excessive bone resportion, indicating
CC the presence of osteoporosis or the metastatic progress of a
CC malignancy. Other conditions characterized by excessive bone
CC resportion include Paget's disease and hyperparathyroidism.
XX
SQ Sequence 1341 AA;

Query Match 65.6%; Score 42; DB 21; Length 1341;
Best Local Similarity 100.0%; Pred. No. 81;
Matches 8; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 2 PQGIAGQR 9
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Db 827 PQGIAGQR 834

RESULT 50
ABB80733
ID ABB80733 standard; protein; 1341 AA.
XX
AC ABB80733;
XX
DT 15-JUL-2002 (first entry)
XX
DE Collagen type I-alpha1 protein.
XX
KW Collagen; osteoarthritis; Paget's disease; Marfan syndrome; dwarfism;
KW osteogenesis imperfecta; neoplastic growth; rheumatoid arthritis;
KW vasculitis; collagen type I-alpha1.
XX
OS Homo sapiens.
XX
FH Key Location/Qualifiers
FT Misc-difference 1..1341
FT /note= "reisdues Xaa are unknown"
XX
PN US6355442-B1.
XX
PD 12-MAR-2002.
XX
PF 13-APR-2000; 2000US-0548608.
XX
PR 04-NOV-1997; 97US-0963825.
PR 21-JAN-1994; 94US-0187319.
XX
PA (OSTE-) OSTEOMETER BIOTECH AS.
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PI Qvist P, Bonde M;
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DR WPI; 2002-380937/41.
XX
PT Assaying type I collagen fragments in body fluid, useful for diagnosis
PT and assessing treatment of e.g. osteoarthritis, by competitive
PT immunoassay -
XX
PS Disclosure; Column 23-30; 35pp; English.
XX
CC The invention relates to a method for assaying type I collagen fragments
CC (I) in body fluid. The method involves treating the test sample with:
CC (i) synthetic peptide, immobilised on a support; and (ii) immunological
CC binding partner, reactive with the synthetic peptide, so that (I) and the
CC synthetic peptide compete for binding, and (I) are quantified by
CC measuring the binding of the binding partner to the synthetic peptide.
CC The method is used to diagnose disorders of collagen metabolism,
CC especially osteoarthritis but also Paget's disease, Marfan syndrome,
CC osteogenesis imperfecta, neoplastic growth of collagenous tissue,
CC dwarfism, rheumatoid arthritis or vasculitis, also for clinical testing
CC of drugs to assess their effect on collagen metabolism. The present
CC sequence represents the collagen type I-alpha1 protein.
XX
SQ Sequence 1341 AA;

Query Match 65.6%; Score 42; DB 23; Length 1341;
Best Local Similarity 100.0%; Pred. No. 81;
Matches 8; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 2 PQGIAGQR 9
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Db 827 PQGIAGQR 834

Search completed: May 16, 2003, 10:40:01
Job time : 47 secs